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STATE AND FEDERAL WATER LAWS AND CONSIDERATIONS AFFECTING FUTURE LEGISLATION

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FOREWORD

This publication, prepared in accordance with the provisions of Sections 113-3 and 113-8, General Statutes of North Carolina, comprises four sections: (1) water laws of North Carolina and comments thereon by interested persons, (2) water laws of other States and action in progress toward future legislation, (3) Federal laws pertaining to water resources, and (4) considerations affecting future water legislation. Its principal function is to assist the Board of Water Commissioners of the State of North Carolina in accomplishing the objectives of the act which created the Board. It is hoped that the material contained herein will be of interest and some help to others concerned with the conservation, development, and utilization of water resources.

No authorship exists or is claimed in the production of this publication, which consists entirely of an assembly of material from many sources, to whom grateful appreciation is hereby expressed. Great care has been taken to give herein due credit to these sources. Wherever material from "The Movement for New Water Rights Laws in the Tennessee Valley States" occurs, joint authorship by Robert H. Marquis, Richard M. Freeman, and Milton S. Heath, Jr., should have been indicated herein.

Subsequent to preparation of this publication for reproduction, it was noted that the North Carolina law pertaining to sanitary districts had been omitted. This law is contained in Sections 130-33 to 130-57.1, General Statutes of North Carolina, as amended. Sanitary districts, organized under the provisions of this law, have, among others, the following powers:

a. Under the supervision of the State Board of Health, to acquire, construct, maintain, and operate a sewerage system, sewage disposal or treatment plant, water supply system, water purification or treatment plant, or such other utilities as may be necessary for the preservation and promotion of the public health and sanitary welfare within the district.

b. To issue certificates of indebtedness against the district.

c. To issue bonds of the district.

d. To cause taxes to be levied and collected upon all the taxable property within the district . . .

e. To acquire, either by purchase, condemnation, or otherwise, and hold real and personal property, easements, rights-of-way, and water rights within and/or without the corporate limits of the district . . .

f. To negotiate and enter into agreement with the owners of existing water supplies, sewerage systems, or other such utilities as may be necessary to carry into effect the intent of the law ...

g. To contract with any person, firm, corporation, city, town, village, or political subdivision of the state, both within and/or without the corporate limits of the district, to supply raw and/or filtered water to said person (under certain conditions). . .

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SECTION I

WATER LAWS OF NORTH CAROLINA AND COMMENTS THEREON

(Note: Numbers preceding paragraphs indicate chapters and sections of North Carolina statutes. For example, 113-8 indicates Section 8 of Chapter 113, General Statutes of North Carolina.)

Electric, Telegraph, and Power Companies

56-5. Grant of eminent domain. - Any person, firm, or co-partnership operating electric power lines for lights or power, or authorized by law to establish such lines, or any duly incorporated company possessing the power to construct telegraph or telephone lines, lines for the conveying of electric power or for lights, either or all, shall be entitled, upon making just compensation therefor, to the right of way over the lands, privileges, and easements of other persons and corporations, and to the right to erect poles and towers, to establish offices, and to take such lands as may be necessary for the establishment of their reservoirs, ponds, dams, works, railroads, or sidetracks, or powerhouses, with the right to divert water from such ponds or reservoirs and conduct the same by flume, ditch, conduit, waterway, or pipeline, or in any other manner, to the point of use for generation of power at its said power-houses, returning said water to its proper channel after being so used.

Railroad Corporations

60-37. Powers with respect to intersection with highways and waterways.- Every railroad corporation shall have power to construct its road across, along, or upon any stream of water, water-course, street, highway, plankroad, turnpike, railroad, or canal which the route of its road shall intersect or touch; but the company shall restore the stream or water-course, street, highway, plankroad, or turnpike road, thus intersected or touched, to its former state or such state as not unnecessarily to have impaired its usefulness.

Public Utilities Commission (62-1 to 148, incl.)

It shall be the duty of the Commission to make to the governor annual reports of its transactions, and recommend from time to time such legislation as it may deem advisable under the provisions of Chapter 62 of the General Statutes.

The commission shall have general power and control over the public utilities and public-service corporations of the State and such supervision as may be necessary to carry into full force and effect the laws regulating the companies, corporations, partnerships, and individuals hereinafter referred to, and to fix and regulate the rates charged the public for service, and to require such efficient service to be given as may be reasonably necessary.

The commission has power to make any necessary and proper rules, orders, and regulations for the safety, comfort and convenience of passengers, shippers, or patrons of any public-service corporation, and to require the observance of and to enforce the same by the company and its employees.

The commission shall have general supervision over the rates charged and the service given by, among others, all water power and hydroelectric companies or corporations now doing business in this state or which may hereafter engage in doing business in this state.

The commission may require the location, establishment, maintenance, and operation of water gauging stations, and the commission and the North Carolina Department of Conservation and Development may cooperate with each other as to such locations, construction, and reports, and upon the results of operation.

Condemnation for Mill by Owner of One Bank of Stream

73-5. Special proceedings; parties; summons. - Any person wishing to build a water mill, who has land on only one side of a stream, shall issue a summons, returnable to the superior court of the county in which the land sought to be condemned, or some part of it, lies, against the persons in possession and the owners of the land on the opposite side of the stream, and against such others as have an interest in the controversy, and the procedure shall be as is provided in other special proceedings, except so far as the same may be modified by this chapter.

73-6. Commissioners to be appointed. - If no just cause is shown against the building of such mill, the court shall appoint three freeholders, one of whom shall be chosen by the plaintiff, another by the defendants, and the third by the court, or, if the plaintiff or defendants refuse, or fail, or unreasonably delay, to name a commissioner, the court shall name one in lieu of such delinquent party. These commissioners may be changed from time to time by permission of the court for just cause shown.

73-7. Meeting to be appointed and commissioners notified; witnesses examined. - The third commissioner shall cause the others to be notified of the time and place of meeting, and shall preside at their meetings. They may, if necessary, summon and examine witnesses, who shall be sworn by the presiding commissioner.

73-8. Oath and duty of the commissioners. - The commissioners shall be sworn by some officer qualified to administer an oath to act impartially between the parties, and to perform the duties herein imposed on them honestly and to the best of their ability. They shall view the premises where the mill is proposed to be built, and shall lay off and value a portion of the land of the plaintiff, not to exceed one acre in area, and an equal area of land of the defendants opposite thereto, and report their proceedings to the court within a reasonable time, not exceeding sixty days.

73-9. Contents of commissioners' report. - The report of the commissioners shall set forth:

1. The location, quantities, and value of the several areas laid off by them.
2. Whether either of them includes houses, gardens, orchards, or other immediate conveniences.
3. Whether the proposed mill will overflow another mill or create a nuisance in the neighborhood.
4. Any other matter upon which they have been directed by a court to report, or which they may think necessary to the doing of full justice, between the parties.

73-10. When building not to be allowed. - If the area laid off on the land of either party take away houses, gardens, orchards, or other immediate conveniences, or if the mill proposed will overflow another mill, or will create a nuisance in the neighborhood, the court shall not allow the proposed mill to be built.

73-11. Power of court on return of report. - If the report is in favor

of building the proposed mill, and is confirmed, then the court may, in its discretion, allow either the plaintiff or defendant to erect such mill at the place proposed, and shall order the costs, and the value of the opposite area, to be paid by the party to whom such leave is granted; and, upon such payment, the party to whom such leave is granted shall be vested with title in fee to the opposite area. Such payment may be made into court for the use of the parties entitled thereto.

73-12. Time for beginning and building mill; to be kept up. - The person to whom leave is granted shall, within one year, begin to build such water mill, and shall finish the same within three years; and thereafter keep it up for the use and ease of its customers, or such as shall be customers to it; otherwise, the said land shall return to the person from whom it was taken, or to such other person as shall have his right, unless the time for finishing the mill, for reasons approved by the court, be enlarged.

Condemnation for Races, Waterways, etc., by Owner of Mill or Millsite

73-14. Special proceedings; summons. - Any person who has land on one or both sides of a stream and wishes to build a water mill, or has a water mill already built and may find it necessary for the operation of said mill or the building of the said mill to convey water either to or from his mill by ditch, waterway, drain, millrace, or tailrace, or in any other manner, over the lands of any other person, or erect a dam to pond said water over the lands of any other person, or raise any dam already built, may make application by petition in writing to the clerk of the superior court of the county in which the said lands to be affected, or a greater part thereof, are situated, for the right to so convey the said water or pond the same by the erection of a dam or the raising of any dam already built; and the procedure shall be the same as in other special proceedings.

73-15. Contents of petition - The petition shall specify the lands to be affected, the name of the owner of said lands, and the character of the ditch, race, waterway or drain or pond intended to be made, and said owner or owners shall be made parties defendant.

73-16. Commissioners to be appointed.- Upon the hearing of the petition, if the prayer thereof be granted, the clerk shall appoint three disinterested persons, qualified as jurors and not connected either by blood or marriage with the parties, appraisers to assess the damage, if any, that will accrue to the said lands by the contemplated work, and shall issue a notice to them to appear upon the premises on a day specified, not to exceed ten days from the date of said notice.

73-17. Oath and duty of commissioners. - The appraisers, having met, shall take an oath before some officer, qualified to administer oaths, to faithfully perform their duty and to do impartial justice in the case, and shall then examine all the lands in any way to be affected by the said work and assess the damage thereto and make report thereof under their hands and seals to the clerk from whom the notice issued, who shall have power to confirm the same.

73-18. Assessment of damages. - In determining the compensation to be paid to the owners of the said lands and assessing the damages thereto by reason of the erection of such waterway, ditch, drain, or dam, they shall make an allowance or deduction on account of any benefits which the parties in interest may derive from the construction or erection of such waterway, ditch, drain, or dam, and shall ascertain the damages, as near as may be, to the extent it may

damage each acre of land so appropriated or occupied by the said mill-owner. The damages assessed shall include all damages that the owners shall thereafter suffer or be entitled to by reason of the construction of the said waterways, races, ditches, or dams.

Mines and Quarries

74-25. Water and drainage rights obtained. - Any person or body corporate engaged or about to engage in mining, who may find it necessary for the furtherance of his operations to convey water either to or from his mine or mines over the lands of any other person or persons, may make application by petition in writing to the clerk of the superior court of the county in which the lands to be affected or the greater part are situated, for the right so to convey such water. The owner of the lands to be affected shall be made a party defendant, and the proceeding shall be conducted as other special proceedings.

(Note: The proceeding is similar to that for condemnation for mill by owner of one bank of stream.)

Opening and Clearing Streams (77-1 to 11, incl.)

Where any inland river or stream runs through the county, or is in line of their county, the boards of commissioners of the several counties may appoint commissioners to view such river or stream, and make out a scale of the expense of labor with which the opening and clearing thereof will be attended; and if the same is deemed within the ability of the county, and to be expedient, they (the boards of commissioners of the several counties) may appoint and authorize the commissioners (appointed to view such river or stream) to proceed in the most expeditious manner in opening and clearing the same.

The board of county commissioners may appoint commissioners to lay off the rivers and creeks in their county. In laying off the stream, they shall allow three-forths for the owners of the streams for erecting slopes, dams, and stands, and one-fourth part, including the deepest part, they shall leave open for the passage of fish, marking and designating the same in the best manner they can. If mills are built across such streams, and slopes may be necessary, the commissioners shall lay off such slopes, and determine the length of time they shall be kept open. Such commissioners shall return to their respective boards of county commissioners a plan of such slopes, dams, and other parts of streams viewed and surveyed.

The commissioners appointed by the board of county commissioners to lay off the rivers and creeks shall have power to lay off gates, with slopes attached thereto, upon any milldam built across such stream, of such dimensions and construction as shall be sufficient for the convenient passing of floating logs and other timber, in cases where it may be deemed necessary by the said board of county commissioners. They shall return to the board of county commissioners appointing them a plan of such gates, slopes, and dams in writing.

Upon the confirmation of the report made by the commissioners, and notice thereof given to the owner or keeper of said mill, it shall be his duty forthwith to construct, and thereafter to keep and maintain, at his expense, such gate and slope, for the use of persons floating logs and other timber as aforesaid, so long as such dam shall be kept up, or until otherwise ordered by the board of county commissioners.

The commissioners appointed as aforesaid, at any time that they deem such gate and slope no longer necessary, may report the fact to their respective

boards of county commissioners, and said boards of county commissioners may order the same to be discontinued.

If any owner or keeper of a mill, whose dam is across any stream, shall fail to build a gate and slope therein, or thereafter to keep the same as required by commissioners to lay off rivers and creeks, he shall be guilty of a misdemeanor.

The board of county commissioners may establish public landings on any navigable stream or watercourse in the county upon petition in writing. The board is authorized to enter upon any land and locate a public landing after service of notice upon the landowner that a landing is to be established. If the board and landowner cannot agree upon the damages, if any, the board shall, on the expiration of sixty days from the completion of the landing, cause to be summoned three disinterested freeholders of the county, who shall go upon the land and assess the damages and benefits according to the general law. No suit shall be instituted by a landowner for damages for the location of the landing earlier than sixty days, nor later than six months, after the completion of the landing.

Obstructions in Streams (77-12 and 13)

If any person shall obstruct the free passage of boats along any river or creek by felling trees, or by any other means whatever, he shall be guilty of a misdemeanor.

If any person shall wilfully fell any tree, or wilfully put any obstruction, except for the purpose of utilizing water as a motive power, in any branch, creek, or other natural passage for water, whereby the natural flow of water through such passage is lessened or retarded, and whereby the navigation of such stream by any raft or flat may be impeded, delayed, or prevented, the person so offending shall be guilty of a misdemeanor. Nothing in this section shall prevent the erection of fishdams or hedges which do not extend across more than two-thirds of the width of any stream where erected.

Acquisition of Lands for River and Harbor Improvement (104-6 and 11)

The consent of the legislature of the state is hereby given to the acquisition by the United States of any tracts, pieces, or parcels of land within the limits of the state, by purchase or condemnation, for use as sites for locks and dams, or for any other purpose in connection with the improvement of rivers and harbors within and on the borders of the state. The consent hereby given is in accordance with the seventeenth clause of the eighth section of the first article of the constitution of the United States, and with the acts of congress in such cases made and provided; and this state retains concurrent jurisdiction with the United States over any lands acquired and held in pursuance of the provisions of this section, so far as that all civil and criminal process issued under authority of any law of this state may be executed in any part of the premises so acquired, or the buildings or structures thereon erected.

Hereafter, whenever any waterway improvement in North Carolina by the use of federal funds is provided for upon condition that the state or locality shall furnish rights-of-way or permits for the dumping of dredged material, or furnish or do any other thing in connection with the proposed waterway improvement, the Utilities Commission is authorized and empowered to represent the State or locality in securing the rights-of-way, permits for the dumping or dredged material, or other things required in connection with such waterway

improvement. In prosecuting such undertaking, the Utilities Commission may follow the same procedure provided for the acquisition of rights-of-way for the intracoastal waterway from the Cape Fear River to the South Carolina line. The Utilities Commission is not hereby authorized to enter into obligation or contract for the payment of any money or proceeds through condemnation or otherwise without the express approval of the governor and council of state.

Department of Conservation and Development

(113-3) It shall be the duty of the department, by investigation, recommendation and publication, to aid in promoting a more profitable use of lands, forests and waters, and to collect and classify the facts derived from such investigations and from other agencies of the State as a source of information easily accessible to the citizens of the State and to the public generally.

(Note: In the collection and classification of the facts derived from investigations of waters as a source of information, the State Geologist and the Chief Engineer, Division of Water Resources, Inlets and Coastal Waterways, Department of Conservation and Development, have responsibilities pertaining to ground waters and surface waters, respectively.)

(113-8) The Board of Conservation and Development shall have control of the work of the Department. It shall make investigations of the natural, industrial and commercial resources of the state, and take such measures as it may deem best suited to promote the conservation and development of such resources. It shall have the care of State forests and parks, and other recreational areas now owned or to be acquired by the State, including White Lake, Black Lake, Waccamaw Lake, and any other lake in Bladen, Columbus, or Cumberland Counties, containing five hundred acres or more. It shall make investigations of water supplies and water powers, with recommendations and plans for promoting their more profitable use, and take such measures as it may consider necessary to promote their development. The Board may take such measures as it may deem advisable to obtain and make public a more complete knowledge of the State and its resources, and it is authorized to cooperate with other departments and agencies of the State in obtaining and making public such information. It shall be the duty of the Board to arrange and classify the facts from the investigations made, so as to provide a general source of information in regard to the State, its advantages and resources.

(113-8.1) Any person, firm, or corporation utilizing waters of North Carolina taken from the streams, rivers, creeks, or lakes of the State in such an amount as to substantially reduce the volume or flow thereof for the purpose of irrigation shall, before utilizing this resource in this manner, make application to the Director of the Department of Conservation and Development for a permit for such use. Such person, firm, or corporation shall file with the Department of Conservation and Development a proposed irrigation plan and survey. The Director of Conservation and Development is hereby authorized to investigate such a plan as to safety and public interest and to approve plans and specifications and issue permits.

(113-16) The Board is authorized and directed to cooperate with the Federal Power Commission in carrying out the rules and regulations promulgated by that commission; and to act in behalf of the State in carrying out any regulation that may be passed relating to water-powers in this State other than those related to making and regulating rates.

(Note: The Board has not co-operated and acted as set forth in the preceding section because all of the power generated at Federal dams in North

Carolina is administered by the Tennessee Valley Authority, there being no Federal dams in the State east of the Blue Ridge Mountains.)

(113-17) The Department of Conservation and Development is delegated as the State agency to represent North Carolina in any agreements, negotiations, or conferences with authorized agencies of adjoining or other States, or agencies of the Federal Government, relating to the joint administration or control over the surface or underground waters passing from one State to another; Provided, that in all matters relating to pollution of said waters, the Department and the State Board of Health, acting jointly, are hereby designated as the official agency under the provisions of this section.

(113-18) All sums payable to the State of North Carolina by the Treasurer of the United States of America under the provisions of section 17 and other sections of the Federal Water Power Act shall be paid to the account of the State Department of Conservation and Development in prosecuting investigations for the utilization and development of the water resources of the State.

(113-19) The Board is authorized to cooperate with the North Carolina Utilities Commission in investigating the water-powers in the State, and to furnish the Utilities Commission such information as is possible regarding the location of the water-power sites, developed water-powers, and such other information as may be desired in regard to water-power in the State. The Board shall also cooperate as far as possible with the Department of Labor, the State Department of Agriculture, and other departments and institutions of the State in collecting information in regard to the resources of the State and in preparing the same for publication in such manner as may best advance the welfare and improvement of the State.

(113-20) The Board is authorized to co-operate with the counties of the State in any surveys to ascertain the natural resources of the county and with the governing bodies of cities and towns, with boards of trade and other like civic organizations, in examining and locating water supplies and in advising and recommending plans for other municipal improvements and enterprises. Such cooperation is to be conducted upon such terms as the Board may direct.

(113-21) Cooperation of counties with State in making water resource survey. The board of county commissioners of any county of North Carolina is authorized and empowered, in their discretion, to cooperate with the Department of Conservation and Development or other association, organizations, or corporation in making surveys of any of the natural resources of their county, and to appropriate and pay out of the funds under their control such proportional part of the cost of such survey as they may deem proper and just.

(113-27) The Department is designated as the official State agency to investigate and cause investigations to be made of the coasts, ports and waterways of North Carolina and to cooperate with agencies of the Federal and State Governments and other political sub-divisions in making such investigations.

(113-170) Explosives, drugs, and poisons prohibited. - It shall be unlawful to place in any waters of this state any dynamite, giant or electric powder, or any explosive substance whatever, or any drug or poisoned bait, for the purpose of taking, killing, or injuring fish.

(113-172) Discharge of deleterious matter into waters prohibited. - It shall be unlawful to discharge or to cause or permit to be discharged any deleterious or poisonous substance or substances inimical to the fishes inhabiting the said waters.

(113-244) Poisoning streams. - If any person shall put any poisoning substance for the purpose of catching, killing, or driving off any fish in any of the waters of a creek or river, he shall be guilty of a misdeameanor.

(113-251) Obstructing passage of fish in streams. - If any person shall set a net of any description across the main channel of any river or creek, or shall erect, so as to extend more than three-fourths of the distance across any such river or creek, any stand, dam, weir, or hedge, in any part of any creek that may be left open for the passage of fish, or who, having erected any dam where the same was allowed, and shall not make or keep open such slope or fishway as may be required by law to be kept open for the free passage of fish, he shall be guilty of a misdemeanor.

(113-252) Dams for mills and factories regulated; sluiceways. - No person shall place or allow any dam for mill or factory purposes in the Chowan River between Holliday's Island and the Virginia line and in other streams indicated in the section between the limits specified unless the owner thereof shall construct thereon at his own expense a sluiceway for the free passage of fish, of a width not less than three feet nor more than ten feet.

State Board of Health

(130-109) Board of Health to control and examine waters. - The State Board of Health shall have the general oversight and care of all inland waters and shall, from time to time, cause examinations of said waters and their sources and surroundings to be made for the purpose of ascertaining whether the same are adapted for use as water supplies for drinking and other domestic purposes, or are in a condition likely to impair the interests of the public or of persons lawfully using the same, or to imperil the public health. The Board shall make such reasonable rules and regulations as in its judgment may be necessary to prevent contamination and to secure other purifications as may be required to safeguard the public health.

(130-110) Systems of water supply and sewage; plans submitted; penalties. The State Board of Health shall from time to time consult with and advise the boards of all State institutions, the authorities of cities and towns, corporations or firms already having or intending to introduce systems of water supply, drainage or sewerage, as to the most appropriate source of supply, the best practical method of assuring the purity thereof, or of disposing of their drainage or sewage, having regard to the prospective needs and interests of other cities, towns, corporations, or firms which may be affected thereby. All such boards of directors, authorities, corporations, and firms are hereby required to give notice to said board of their intentions in the premises and to submit for its advice outlines of their proposed plans or schemes in relation to water supplies and disposal of sewage, and no contract shall be entered into by any State institution or town for the introduction of a system of water supply or sewage disposal until said advice shall have been received, considered, and approved by the said board. Every municipal or private corporation, company or individual supplying or authorized to supply water for drinking or other domestic purposes to the public shall file with the Secretary of the State Board of Health, within ninety days after the receipt of notice from said secretary, certified plans and surveys, in duplicate, pertaining to the source from which the water is derived, the possible source of infections thereon, and the means in use for the purification thereof, in accordance with the directions to be furnished by the said secretary.

(130-111) Condemnation of lands for water supply. - All municipalities operating water systems, and all water companies operating under charter from the

State or license from municipalities, which may maintain public water supplies, may acquire by condemnation such lands and rights in lands and water as are necessary for the successful operation and protection of their plants.

(130-113) Inspection of watersheds. - The municipality or water company shall have quarterly sanitary inspection made of the entire watershed of any waterworks that derives its water from a surface supply, except in those cases where the supply is taken from large creeks or rivers that have a minimum daily flow of ten million gallons, in which case the inspection shall apply to the fifteen miles of watershed above the waterworks intake. Full report in duplicate of all such inspections shall be made promptly by the sanitary inspector to the Secretary of the State Board of Health. The authorities of any town or city that makes use of a public surface water supply, or the officers of a public surface water supply company may make such additional inspections as such officials may deem necessary.

(130-117) Discharge of sewage into water supply prohibited. - No person, firm, corporation, or municipality shall flow or discharge sewage above the intake into any drain, brook, creek, or river from which a public drinking-water supply is taken, unless the same shall have been passed through some well-known system of sewage purification approved by the State Board of Health; and the continued flow and discharge of such sewage may be enjoined upon application of any person.

(130-118) Cemeteries on watersheds forbidden. - No burying ground or cemetery shall be established on the watershed of any public water supply nearer than 500 years of the source of supply, nor in violation of the rules and regulations of the State Board of Health.

(130-119) Water supply of communities without sewerage systems. - All schools, hamlets, villages, towns, or industrial settlements, which are now located or may hereafter be located on the shed of any public water supply not provided with a sewerage system shall provide and maintain a reasonable system approved by the State Board of Health for collecting and disposing of all accumulations of human excrement within their respective jurisdiction or control.

State Ports Authority (143-216 to 228, incl.)

(216) The North Carolina State Ports Authority is hereby created, consisting of and governed by a board of nine members. (The law, enacted in 1949, stated that the Director of the Department of Conservation and Development shall be ex officio a member of the said board. Such membership was eliminated by a subsequent amendment.) The Governor shall appoint the members of the Board. The membership thereof shall be selected from the State at large, so as to fairly represent each section of the State and all of the business, agricultural and industrial interests of the State.

(217) Through the Authority, the State may engage in promoting, developing, constructing, equipping, maintaining, and operating the harbors and seaports within the State, or within the jurisdiction of the State, and works of improvement incidental thereto, including the acquisition or construction, maintenance, and operation at such seaports or harbors of watercraft, terminal railroads, facilities, highways, and bridges thereon essential for the operation thereof. The Authority is created as an instrumentality of the State for the accomplishment of the following general purposes (and other purposes specified):

To develop and improve the harbors or seaports at Wilmington, Morehead City, and Southport, and such other places as they may deem necessary for the

more expeditious and efficient handling of water-borne commerce from and to any part of the State and other states and foreign countries.

To acquire, construct, maintain, develop, and improve the port facilities at said ports and to improve such portions of the waters thereat as are within the jurisdiction of the Federal Government.

To co-operate with the United States of America and any agency, department, corporation, or instrumentality thereof in the maintenance, development, and use of said harbors and seaports in connection with and in furtherance of the war operations and needs of the United States.

To do and perform any act or function which may tend to, or be useful toward, the development and improvement of the said harbors and seaports of the State of North Carolina, and to increase the movement of waterborne commerce, foreign and domestic, through said harbors and seaports.

(218) The powers of the Authority include (a) making contracts and agreements with other port authorities, (b) renting, leasing, buying, owning, acquiring, encumbering, and disposing of property, (c) acquiring, constructing, maintaining, equipping, and operating necessary facilities, (d) applying for and accepting loans and grants of money from any Federal agency, the State, or any political subdivision thereof, and (e) doing any and all other acts and things in this article required to be done.

(219) The Authority is authorized at one time or from time to time to issue negotiable revenue bonds.

(220) The Authority shall have the right and power to acquire, by purchase, negotiation, or condemnation, rights of way and property necessary for the construction of facilities.

(221) The Authority may exchange any property or properties usable in carrying out its powers, and may remove from lands needed for its purposes, and reconstruct on other locations, structures, upon payment of just compensation, if such removal and reconstruction is necessary or expedient in order to carry out any of its plans for port development.

Wildlife Resources Commission (143-237 to 254)

(239) The function, purpose, and duty of the Commission shall be to manage, restore, develop, cultivate, conserve, protect, and regulate the wildlife resources of the State of North Carolina, and to administer the laws relating to game, game and fresh-water fishes, and other wildlife exclusive of commercial fisheries (administered by the Department of Conservation and Development), enacted by the General Assembly to the end that there may be provided a sound, constructive, comprehensive, continuing, and economical game, game fish, and wildlife program directed by qualified, competent, and representative citizens, who shall have knowledge of or training in the protection, restoration, proper use, and management of wildlife resources.

(240) There is hereby created a Commission to be known as the North Carolina Wildlife Resources Commission. The Commission shall consist of nine citizens of North Carolina, who shall be competent and qualified as herein provided, and shall be appointed by the Governor. Each member of the Commission shall be an experienced hunter, fisherman, farmer, or biologist, who shall be generally informed on wildlife conservation and recreation problems.

(246) The Commission shall select and appoint a competent person, qualified as herein set forth, as Executive Director of the Commission. The Director shall have training in conservation, protection, and management of wildlife resources, shall be charged with the supervision of all activities uner the jurisdiction of the Commission, and shall serve as the chief administrative officer thereof. His term of office shall be at the pleasure of the Commission.

(247) All duties, powers, jurisdiction, and responsibilities, now vested by statute in and heretofore exercised by the Department of Conservation and Development, the Board of Conservation and Development, the Director of Conservation and Development, or any predecessor organization, board, commission, commissioner, or official, relating or pertaining to the wildlife resources of North Carolina, exclusive of commercial fish and fisheries, are hereby transferred to and vested by law in the Wildlife Resources Commission. No provision of this article shall be construed as transferring to or conferring upon the Commission jurisdiction over the administration of laws regulating the pollution of streams or public waters in North Carolina (presently performed by the State Stream Sanitation Committee).

(253) In the event of any question arising between the Department of Conservation and Development and the Wildlife Resources Commission as to any duty or responsibility imposed upon either of said bodies by law, or in case of any conflicting rules or regulations or administrative practices, adopted by said bodies, such questions or matter shall be determined by the Governor and his determination shall be binding on each of said bodies.

(254) All rules and regulations now in force with respect to wildlife resources as herein defined, promulgated by the Department of Conservation and Development, shall continue in full force and effect until altered, modified, or rescinded by the Wildlife Resources Commission, or repealed or modified by law.

John H. Kerr Reservoir Development Commission (143-284 to 290 incl.)

(284) The Commission shall consist of ten members to be appointed by the Governor. One member of said commission shall be a resident of Vance County, one member shall be a resident of Granville County, one member shall be a resident of Warren County, four members shall be appointed from the eastern section of North Carolina as members at large, and one member each shall be appointed from the memberships of the Wildlife Resources Commission, the Board of Conservation and Development, and the North Carolina Recreation Commission. The last three members indicated above shall serve as ex officio members of the Commission.

(286) The Commission shall endeavor to promote the development of the John H. Kerr area situated in northeastern North Carolina, and it shall be the duty of the Commission to study the development of this area and to recommend, to the Department of Conservation and Development, the Wildlife Resources Commission, and the North Carolina Recreation Commission, policies that will promote the development of this area to the fullest extent possible for the benefit and enjoyment of the citizens of North Carolina and of the Nation. It shall confer with the various departments, agencies, commissions, and officials of the Federal Government and the governments of the adjoining states in connection with the development of this John H. Kerr area. It shall also advise and confer with any other state officials or agencies or departments in the State of North Carolina that may be directly or indirectly concerned in the development of the resources of this area, but it shall not in any manner take over or supplant any agencies in their work in this area except so far as is expressly provided for in this article. It shall also advise and confer with various interested individuals,

organizations, or agencies that are interested in developing this area, and shall use its facilities and efforts in formulating, developing, and carrying out overall programs for the development of the area as a whole. It shall have full power and authority to confer with any similar commission created or acting in that part of the area lying in the State of Virginia for the purpose of working out uniform practices and plans affecting the entire area in both States.

(286-1) The Board of Conservation and Development is hereby authorized to enter into lease agreements with the proper agencies of the Federal Government covering the marginal land of the John H. Kerr Reservoir or so much thereof as may be necessary or desirable in order to develop said area for park purposes and to carry on a program of conservation, forestry development, and wildlife conservation. The area so obtained shall be known as the Nutbush Conservation Area. The Board of Conservation and Development is further authorized to delegate to the John H. Kerr Reservoir Development Commission the authority to control and develop the area so leased and to enter into sublease agreements on terms as may be authorized in the original lease agreement. All proceeds obtained from any sublease agreement shall be used exclusively for the further development of the Nutbush Conservation Area.

(287) The Commission shall make a biennial report to the Governor covering its work up to January 1st preceding each session of the General Assembly. It shall also file any such suggestions or recommendations as it deems proper with the Department of Conservation and Development, the Wildlife Resources Commission, and the North Carolina Recreation Commission in respect to such matters as might be of interest to or affect such Department or Commission.

(289) The boards of county commissioners of the counties of Granville, Vance, and Warren, and the municipalities within these counties, are authorized and empowered in their discretion to make annual contributions to the Commission for the purpose of defraying the necessary expenses of operation, and the Commission is authorized and empowered to accept grants or donations from any interested citizens or from any state or federal agency.

(290) The Wildlife Resources Commission, the Department of Conservation and Development, and the North Carolina Recreation Commission are authorized and empowered to include, in their budgets, requests for funds to aid and support the work of the John H. Kerr Reservoir Development Commission.

Powers of Boards of County Commissioners (153-9 to 22, incl.)

(153-9) The boards of commissioners of the several counties shall have power - -

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(18) To appoint a commissioner to open and clear the rivers and creeks, in the manner prescribed by law, within the county or where such river or creek forms a county line or part thereof.

(19) To grant, subject to the approval of the War Department (presently Department of the Army), to any person, firm, or corporation owning or occupying lands on both sides of any navigable stream or creek lying wholly within the limits of the county, the right to construct and maintain a bridge across the said navigable water between the lands owned or occupied by them, upon such terms and conditions and for such time as the said board shall deem advisable and proper. Before any order allowing the construction of the same shall be made, it shall be made to appear to the board that four weeks notice of the application for such right has been given by posting a notice at the courthouse door and four other public places in the county, and also (if there be a newspaper published

in the county) by publishing once a week for four consecutive weeks in some newspaper in the county. Any party aggrieved may appeal from the order of the commissioners to the superior court of the county in term time.

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(22) To establish such public landings and places of inspection as the board may think proper; and to appoint such inspectors in any town or city as may be authorized by law.

Drainage Districts (156-54 to 134, incl.)

(54) The clerk of the superior court of any county in North Carolina shall have the power and authority to establish drainage districts either wholly or partially located in his county, which shall constitute a political subdivision of the State, and to locate and establish levees, drains, or canals, and cause to be constructed, straightened, widened, or deepened, any ditch, drain or watercourse, and to build levees or embankments and erect tidal gates and pumping plants for the purpose of draining and reclaiming wet, swamp, or overflowed land. The drainage districts shall have authority to provide by law to levy taxes and assessments for the construction and maintenance of said public works.

(56) A petition, signed by a majority of the resident landowners in a proposed drainage district or by the owners of three-fifths of all the land which will be affected or assessed for the expense of the proposed improvements, may be filed in the office of the superior court of any county in which a part of the lands is located, setting forth that any specific body or district of land in the county and adjoining counties, described in such a way as to give an intelligent idea as to the location of such land, is subject to overflow or too wet for cultivation, and that the public benefit or utility or the public health, convenience, and welfare will be promoted by draining, ditching, or leveeing the same or by changing or improving the natural watercourses, and setting forth therein, as far as practicable, the starting point, route, and terminus, and lateral branches, if necessary, of the proposed improvement. The petition will also show whether or not the proposed drainage is for the reclamation of lands not then fit for cultivation or for the improvement of land already under cultivation. It shall also state that, if a reclamation district is proposed to be established, such lands so reclaimed will be of such value as to justify the reclamation.

(57) Upon filing with the petition a bond for the amount of fifty dollars per mile for each mile of the ditch or proposed improvement, signed by two or more sureties or by some lawful and authorized surety company, to be approved by the clerk of superior court, conditioned for the payment of all costs and expenses incurred in the proceeding in case the court does not grant the prayer of the petition, the clerk shall cause a summons to be served on all the defendant landowners who have not joined in the petition and whose lands are included in the proposed drainage district. The summons may be served by publication as to any defendants who cannot be personally served as provided by law.

(58) If, at the time of the filing of the petition or at any time subsequent thereto, it shall be made to appear to the court by affidavit or otherwise that there are owners of the whole or any share of any tracts of land, whose names are unknown and cannot after due diligence be ascertained by the petitioners, the court shall order a notice in the nature of a summons to be given to all such persons by a publication of the petition, or of the substance

thereof, and describing generally the tracts of land as to which the owners are unknown, with the order of the court thereon, in some newspaper published in the county wherein the land is located, or in some other county if no newspaper shall be published in the first-named county, which newspaper shall be designated in the order of the court. A copy of such publication shall be posted in at least three conspicuous places within the boundaries of the proposed district, and at the courthouse door of the county. Such publication in a newspaper and by posting shall be made for a period of four weeks. After the time of publication shall have expired, if no person, claiming and asserting title to the tracts of land and entitled to notice, shall appear, the court may, in its discretion, appoint some disinterested person to represent the unknown owners of such lands, and thereupon the court shall assume jurisdiction of the tracts of land and shall adjudicate as to such lands to the same extent as if the true owners were present and represented, and shall proceed against the land itself. If, at any time during the pendency of the drainage proceeding, the true owners of the land shall appear in person, they may be made parties defendant of their own motion and without the necessity of personal service, and shall thereafter be considered as parties to the proceeding; but they shall have no right to except to or appeal from any order or judgment theretofore rendered, as to which the time for filing exceptions on notice shall have expired.

(59) Upon the return day, the clerk shall appoint a disinterested competent civil and drainage engineer, and two resident freeholders of the county or counties in which the lands are located as a board of viewers to examine the lands described in the petition and make a preliminary report thereon. The drainage engineer shall be appointed upon the recommendation of the Board of Conservation and Development; and no member of the board of viewers so appointed shall own any land within the boundaries of the proposed district.

(60) The petitioners shall select an attorney or attorneys to represent them. If they are unable to agree thereon, the selection may be made by the clerk of the court.

(62) The board of viewers shall examine the land described in the petition, and other land if necessary and shall submit to the clerk of the court a written report thereon.

(63) If the viewers report that the drainage is not practicable or that it will not benefit the public health or any highway or be conducive to the general welfare of the community, and the court shall approve such findings, the petition shall be dismissed at the cost of the petitioners. If the viewers report that the drainage is practicable and that it will benefit the public health or any public highway or be conducive to the general welfare of the community, and the court shall so find, then the court shall fix a day when the report will be further heard and considered.

(65) After due notice of further hearing, the court shall hear and determine any objections that may be offered to the report of the viewers. Any land within the proposed levee or drainage district that will not be affected by the leveeing or drainage thereof shall be excluded. If it shall be shown that there is any land within the proposed district that will be affected by the construction of the proposed levee or drain, the boundary of the district shall be so changed as to include such land. The sufficiency of the petition shall be verified, to determine whether or not it conforms to the provisions hereinbefore provided. The efficiency of the drainage or levees may also be determined, and appropriate modification and changes shall be made by the board of viewers. The above facts having been determined to the satisfaction of the court, it shall

declare the establishment of the drainage or levee district.

(66) Any person owning lands within the drainage or levee district shall have the right of appeal.

(67) If it shall be necessary to acquire a right of way or an outlet over and through lands affected by the drainage, and the same cannot be acquired by purchase, then and in such event the power of eminent domain is hereby conferred, and the same shall be condemned.

(68) After the district is established, the court shall refer the report of the engineers and viewers back to them to make a complete survey, plans, and specifications for the drains or levees or other improvements.

(69) The engineer and viewers shall enter upon the ground and make a survey of the main drain or drains and all its laterals. A drainage map of the district shall them be completed, showing the location of the ditch or ditches and other improvements, the boundary of the lands owned by each of the individual landowner within the district, the location of railroads or public highways, and the boundary of incorporated towns or villages within the district. The map shall be accompanied by a profile of each levee, drain, or watercourse, showing the surface of the ground, the bottom or grade of the proposed improvement, the number of cubic yards of excavation or fill, the estimated cost of the proposed improvement, plans and specifications, and the cost of any other work required to be done.

(70) It shall be the further duty of the engineer and viewers to assess the damages claimed by any one that are justly right and due to him for land taken or for inconvenience imposed because of the construction of the improvement, or for any other legal damages sustained. Such damages shall be considered separate and apart from any benefit the land would receive because of the proposed work, and shall be paid by the Board of Drainage Commissioners when such funds shall come into their hands.

(71) It shall be the duty of the engineer and viewers to personally examine the land in the district and classify it with reference to the benefit it will receive from the construction of the levee, ditch, drain, or water-course or other improvement. The land benefited shall be separated in five classes. The land receiving the highest benefit shall be marked "Class A"; that receiving the next highest benefit, "Class B"; that receiving the next highest benefit, "Class C"; that receiving the next highest benefit, "Class D"; and that receiving the samallest benefit, "Class E". The total number of acres owned by one person in each class and the total number of acres benefited shall be determined. The total number acres of each class in the entire district shall be obtained and presented in tabular form. The scale of assessment upon the several classes of land returned by the engineer and viewers shall be in the ratio of five, four, three, two, and one; that is to say as often as five mills per acre is assessed against the lands in "Class A", four mills per acre shall be assessed against the land in "Class B", three mills per acre in "Class C", two mills per acre in "Class D", and one mill per acre in "Class E". This shall form the basis of assessment of the benefits to the lands for drainage purposes.

(73) When the final report is completed and filed, it shall be examined by the court, and, if it is found to be in due form and in accordance with the law, it shall be accepted, and, if not in due form, it may be referred back to the engineer and the viewers, with instructions to secure further information. When the report is fully completed and accepted by the court, a date shall be

fixed by the court for the final hearing upon the report, and notice thereof shall be given.

(74) At the date set for the final hearing, any landowner may appear in person or by counsel and file his objection in writing to the report of the viewers. It shall be the duty of the court to carefully review the report of the viewers and the objections filed thereto, and make such changes as are necessary to render substantial and equal justice to all the landowners in the district. If, in the opinion of the court, the cost of construction, together with the amount of damages assessed, is not greater than the benefits that will accrue to the land affected, the court shall confirm the report of the viewers. If, however, the court finds that the cost of construction, together with the damages assessed, is greater than the resulting benefit that will accrue to the lands affected, the court shall dismiss the proceedings at the cost of the petitioners, and the sureties of the bond so filed by them shall be liable for such costs: Provided, that the Board of Conservation and Development may remit and release to the petitioners the costs expended by the Board on account of the engineer and his assistants.

(75) Any party aggrieved may appeal to the superior court.

(81.1) In the election of drainage commissioners by the owners of land, each landowner shall be entitled to cast the number of votes equaling the number of acres of land owned by him and benefited, as appears by the final report of the viewers. Each landowner may vote for the names of three persons for commissioners. If any person or persons in any district shall own land in any district containing an area greater than one-half of the total area in the district, such owner shall only be permitted to elect two of the drainage commissioners, and a separate election shall be held under the direction of the clerk by the minority landowners, who shall elect one member of the drainage commissioners.

(81.2) Immediately after the election of the Board of Drainage Commissioners, and after the members of the board shall be appointed by the clerk, the clerk of the court shall notify each of them in writing to appear at a certain time and place within the county and organize. The clerk of the superior court shall appoint one of the three members as Chairman of the Board of Drainage Commissioners, and in doing so, he shall consider carefully and impartially the respective qualifications of each of the members for the position.

(81.6) The Board shall meet once each month at a stated time and place during the progress of drainage construction, and more often if necessary. After the drainage work is completed, the Chairman shall have the power to call special meetings of the Board at a certain time and place. The Chairman shall also call a meeting at any time upon the request of the owner of a majority in area of the land in the district.

(83) The Board of Drainage Commissioners shall appoint a competent drainage engineer of good repute as Superintendent of Construction, by and with the approval and recommendation of the Board of Conservation and Development. Such superintendent of construction shall furnish a copy of his monthly and final estimates to the Board of Conservation and Development, in addition to other copies herein provided which shall be filed and preserved.

(84) The Board of Drainage Commissioners shall give notice of the time and place of letting the work of construction of the improvement. On the date appointed for the letting, they, together with the Superintendent of Construction, shall convene and let to the lowest responsible bidder the proposed work. The

successful bidder shall be required to enter into a contract with the Board of Drainage Commissioners and to execute a bond for the faithful performance of the work.

(85) The Superintendent of Construction shall make monthly estimates of the amount of work done. The Commissioners shall meet and direct the secretary to draw a warrant in favor of the contractor for ninety per centum of the work done. When the work is fully completed and accepted by the superintendent, his estimate for the whole amount due, including the amounts withheld on the previous monthly estimates, shall be paid from the drainage fund.

(92) Whenever any improvement is completed, it shall be under the control and supervision of the Board of Drainage Commissioners. It shall be the duty of the Board to keep the levee, ditch, drain, or water-course in good repair, and for this purpose they may levy an assessment on the lands benefited by the construction of the improvement in the same manner and in the same proportion as the original assessments were made, and the fund that is collected shall be used for repairing and maintaining the ditch, drain, or water-course in perfect order.

(94) After the classification of lands and the ratio of assessments of the different classes to be made thereon (see 71 above) has been confirmed by the court, the Board of Drainage Commissioners shall ascertain the total cost of the improvement, including damages awarded to be paid to owners of land (see 70 above), all costs and incidental expenses, and an amount sufficient to pay the necessary expenses of maintaining the improvement for a period of three years after the completion of the work of construction, not exceeding ten per centum of the estimated actual cost of constructing the drainage works, or the contract price thereof if such contract has not been awarded, and after deducting therefrom any special assessments made against any railroad or highway, and, thereupon, the Board of Drainage Commissioners shall certify to the clerk of the superior court the total cost. The certificate shall be forthwith recorded in the drainage record and open to inspection of any landowner in the district.

(95) If the total cost of the improvement is less than an average of twenty-five cents per acre on all the land in the district, the Board of Drainage Commissioners shall forthwith assess the lands in the district therefor, in accordance with their classification (see 71 above), and said assessment shall be collected in one installment, by the same officer and in the same manner as state and county taxes are collected, and payable at the same time. In case the total cost exceeds twenty-five cents per acre on all lands in the district, the Board of Drainage Commissioners shall give notice, reciting that they propose to issue bonds for the payment of the total cost of the improvement, giving the amount of the bonds to be issued, the rate of interest they are to bear, and the time when payable. Any landowner not wanting to pay interest on the bonds may pay to the county treasurer the full amount for which his land is liable and have his lands released from liability to be assessed for the improvements. Such lands shall continue liable for any future assessment for maintenance or for any increased assessment authorized under the law.

(97) At the expiration of fifteen days after publication of notice of bond issue, the Board of Drainage Commissioners may issue bonds of the drainage district for an amount equal to the total cost of the improvement, less such amounts as shall have been paid in cash to the county treasurer.

(99) The commissioners may sell these bonds at not less than par and devote the proceeds to the payment for the work as it progresses and to the payment of the other expenses of the district provided for in this subchapter (156-54 to 138, inclusive).

(103) The Board of Drainage Commissioners shall immediately prepare the assessment rolls or drainage tax lists, giving thereon the names of the owners of land in the district and a brief discription of the several tracts of land assessed and the amount of assessment against each tract of land.

(108) The clerk of the superior court in each county where one or more drainage districts have been established shall be required to have prepared annually during the month of August a form of receipt, with appropriate stubs attached, properly bound, for the drainage assessment due on each tract of land as recited in the assessment rolls.

(111) The sheriff or tax collector shall be required to make settlements with the county treasurer on the first day of each month of all collections of drainage assessments for the preceding month, and to pay over to the treasurer the money so collected for which the treasurer shall issue an appropriate receipt to the end that the treasurer may have funds in hand to meet the payment of interest and principal due upon the outstanding bonds as they mature.

(116.1) Where the court has confirmed an assessment for the construction of any public levee, ditch, or drain, and such assessment has been modified by the court of superior jurisdiction, but for some unforeseen cause it cannot be collected, the Board of Drainage Commissioners shall have power to change or modify the assessment as originally confirmed to conform to the judgment of the superior court and to cover any deficit that may have been caused by the order of the court or unforeseen occurence.

(117) Subdistricts may be formed by owners of land in main districts theretofore established in the manner provided for the organization of main districts.

(130) It shall be the duty of the commissioners of all drainage districts in the State of North Carolina, organized under the provisions of the laws thereof, to file, with the clerk of the superior court in the county where such district is organized, a monthly statement or account during the construction of canals for the district, showing the receipts and expenditures of all funds coming into their hands, belonging to such drainage district, for the period of one month prior to the day on which the same is filed, also to post a copy of such statement or account at the courthouse door in the county.

(131) At the end of each fiscal year, the board of commissioners of each drainage district in the State of North Carolina shall file, with the clerk of the superior court in the county where the district is organized, a verified itemized statement of receipts and expenditures, shall post a copy of same at the courthouse door, and shall publish such account in a newspaper published in the county, if there be one.

(133) The board of county commissioners of each county, in which one or more drainage districts have been established, shall annually, on the first Monday in May, appoint one of the members of the finance committee of the county, if the county has such finance committee, who shall be designated "Auditor for Drainage District". If the county has no finance committee, then the board of county commissioners shall appoint an intelligent and competent person of sufficient experience who shall be designated as the "Auditor for Drainage District".

(134) The auditor of the drainage district will be required to examine the assessment roll and the records and accounts of the sheriff or tax collector as to assessment rolls. He shall examine the books of the treasurer of the

county and report the amount of drainage assessments paid to the treasurer, and for what purposes paid. He shall make a report to the Board of County Commissioners, and shall deliver a duplicate of such report to the Chairman of Drainage Commissioners.

Neuse River Watershed Authority (Session Laws of 1953)

Chapter 1115, as amended by Chapter 1319, 1953 Session Laws of North Carolina created the Neuse River Watershed Authority, consisting of two members appointed by the Board of County Commissioners of each county within the drainage area of the Neuse River, namely, Durham, Wake, Johnston, Wayne, Lenoir, Greene, Jones, and Craven Counties. The law directed that, within 60 days after appointment, the members hold an organization meeting in one of the counties involved and select thereat a chairman, vice-chairman, and secretary-treasurer, who would thereupon become members of the Authority. Provision was made that two non-voting advisory members may be appointed by the county commissioners of each of the above counties, and the mayors of the towns within such county, by joint action. Each such county was directed to pay into the office of the secretary-treasurer of the Authority a sum not to exceed $100.00 on July 1, 1953, or upon completion of the organization of the Authority, for organizational expenses incurred during the first year, and thereafter to pay a like sum on the first day of July of each and every year, provided that such need arises in the discretion of the board of the Authority.

Purpose of the Authority - Such purpose is to promote the mutual interests of the several counties, towns, cities, and communities in the Neuse River Watershed area:

(a) In preventing floods;
(b) In regulating stream channels by changing, widening, and deepening the same;
(c) In reclaiming or filling in wet and overflowed lands;
(d) In providing for irrigation wherever it may be needed;
(e) In regulating the flow of streams and conserving the water thereof;
(f) In diverting or in part eliminating water courses;
(g) In providing a water supply for domestic, industrial, and public use;
(h) In providing for the collecting and disposing of sewage and other waste produce; and
(i) In arresting erosion not inconsistent with Chapter 139 of the General Statutes relating to soil conservation districts.

Powers of the Authority - Such powers are:

(a) By gift, trade or purchase, to acquire equipment, materials, supplies, engineering data, and any other personal property;
(b) To accept, from any person, corporation, town, city, county, state, or the United States, title to, and all rights and interest in, lands;
(c) To enter into agreement with the State or any agency of the State, or with the United States Government or any appropriate agency of the United States Government;
(d) To work out and enter into agreements with the governing bodies of the towns and the several counties within the Neuse River Watershed area for payment to the Authority of a sum reasonably commensurate with any projects intended to conserve and develop the water resources of the Neuse River Watershed;
(e) To provide necessary personnel to maintain proper records and to secure necessary legal advice in drawing contracts and other papers for the Authority; and
(f) To rent, lease, authorize the sale of, and sell timber, and otherwise handle and dispose of any and all real or personal property

that may come within its possession, limited to the promotion of this project as a water resources area.

Annual Report - The law directed that the Authority make an annual report to the commissioners of the several counties and to the governing bodies of the cities and towns cooperating with the Authority.

Board of Water Commissioners (Session Laws of 1955, H. B. 962)

The general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water be exercised with the view to the reasonable and beneficial use thereof in the public interest.

There is hereby created a Board of Water Commissioners of the State of North Carolina to consist of seven members to be appointed by the Governor, at least one of whom shall represent the interests of agriculture, at lease one of whom shall represent the interests of the electric power industry, at least one of whom shall represent the interests of other industries, and at least one of whom shall represent the interests of municipalities.

The Advisory Committee, which shall act in an advisory capacity to the Board, shall consist of eight ex-officio members (specified in the act) and eight members appointed by the Governor as follows: three members of the House of Representatives, two members of the Senate, one member who shall represent the electric power industry, one member who shall represent other industries, and one member who shall represent municipalities.

The ordinary powers and duties of the Board are to (a) carry out a program of planning, research, and education concerning the most beneficial long-range conservation and use of the water resources of the State; (b) maintain a general inventory of the water resources of the State; (c) solicit from the various water interests of the State their suggestions regarding fair and beneficial legislation affecting the use and conservation of water; and (d) file with the Governor and the General Assembly a biennial report in which activities for the preceding two years shall be summarized and which shall contain recommendations for the improvement and methods of conserving and using the State's water resources.

During a period of water emergency declared by the Governor to exist within a particular area of the State, the Board shall have the following duties and powers to be exercised only within said area: (a) To authorize any county or municipality within the area to divert water in the area to take care of the needs of human consumption, necessary sanitation, and public safety; and (b) to make such reasonable rules and regulations for the conservation and use of diverted waters within the area as shall be necessary for the health and safety of the persons who reside therein. Failure reasonably to follow recommendations, which the Board, based on information available shall have made for restricting and conserving the use of water or increasing the water supply by or in a local governmental unit, following a notification thereto of potential water shortages foreseen by the Board affecting the water supply of such unit, shall make such unit ineligible to receive any emergency diversion of waters. There shall be no diversion of waters unless the person controlling the water or sewerage system into which such waters are diverted shall first have limited the use of water in such system to human consumption, necessary sanitation, and public safety, and shall have effectively enforced such restrictions. The person controlling such

system shall be liable to all persons suffering any loss or damage caused by or resulting from the diversion of such waters or caused by or resulting from any temporary water lines to effectuate the diversion.

Water and Sewer Authorities (Session Laws of 1955)

Chapter 1195 of the 1955 session laws provides two or more political subdivisions, including public corporations, with authority to organize water and sewer authorities. It also authorizes the political subdivisions to convey the water and sewer systems to such an authority when it is created and permits the political subdivisions to enter into contracts providing for supply services from the authority. The water and sewer authorities have no power to acquire, by eminent domain, water, water rights, or lands having water rights attached, without first securing from the Board of Water Commissioners a certificate authorizing such acquisitions. The Water Commissioners are required to hold public hearings on the matter and may issue certificates only to such projects as have met the test of using the water most beneficially on a statewide basis. At the hearing, the Board must determine the necessity for the project and whether it will promote storage and conservation of water. It must investigate the damage done to present users in the watershed, the feasibility of alternate sources of supply, and the detriment to present and potential users of such alternate sources of supply. The act provides for an action of damages for any injury to a lower riparian owner.

Joint Action by two or more Municipalities Pertaining to Water Supply Facilities

Chapter 1201, North Carolina Session Laws of 1955 (H.B. No. 1035), authorizes two or more municipalities jointly to acquire, construct, improve, maintain, and operate water supply facilities; to appropriate money therefor; to enter into contracts or agreements with reference to such joint action; and to issue bonds therefor.

Property in Water (Doctrine of Riparian Rights as interpreted by N. C. Courts)

The old English law of private property followed the doctrine that, when one had title to land, he also had title to all physical appurtenances thereto. His property was all that was encompassed within the exterior boundaries, from the center of the earth to the heavens. He had property in a stream flowing through or by his holdings. He could use it, but the next property owner downstream also had the same rights to that water, known as riparian rights. The English law held that each landowner along a stream is entitled to the original, unimpaired flow. The doctrine of riparian rights, as interpreted from time to time by decisions of courts of the State, has governing force in North Carolina.

Under the riparian doctrine, an owner of land contiguous to a water course has the right to have a stream, which flows by or through his land, continue its course undiminished in quantity, with the exception that any riparian owner may make whatever use of the water he needs for domestic and household purposes and for watering his farm animals.

At the present time, water courses in North Carolina may be grouped into three classifications: (1) coastal bays and inlets and other waters which can be navigated by sea vessels; (2) other water courses which are wide and deep enough to be navigated by boats, flats, and rafts; and (3) rivulets, brooks, and other streams which for any reason cannot be used for inland navigation.

Those waters which fall into class (1) are navigable waters and are

altogether public in character. Hence, neither they nor the soil under them can be entered by or granted to private persons.

Waters coming within class (2) are technically unnavigable, and title to them can be acquired by individuals. If the grant includes the bed of such a stream, the owner may place a dam in the stream, a thing which could perhaps not be done by a mere riparian owner. If a person does not have title to the bed of such a stream, he simply has an incidental easement in the stream which he may exercise in a manner compatible with the right which the public has in the stream. The extent of this easement and the manner in which it may be enjoyed may be regulated by statute.

The owners of land contiguous to waters in class (3) may make any use of these waters which they may consider desirable, such as for fishing, milling, or some other lawful trade or business. There is, however, one restriction upon the use which these owners may make of such waters, nemely, each owner must so use the water on his property as not to interfere with the similar rights of other persons who own property above and below him on the same stream. (The above classification is approved in STATE v. GLEN, 52 N.C. 321, at pages 333 and 334).

Obviously, the State may regulate the use of waters which fall within class (1). If a watercourse falls within class (2), the State may regulate the use of the stream. It must be careful, however, not to interfere with property rights of landowners. In STATE v. GLEN, 52 N.C. 321 (1859), the Supreme Court of North Carolina held that, where a person had title to land on both sides of a stream and title to the bed of the stream also, he could build a dam on the bed of this stream and this right to erect the dam could not be taken away from him except for a public purpose and upon just compensation. The same reasoning would seem to apply to waters within class (3). Here, also, it would seem that the State could exercise some power on the theory that it was determining the extent to which water rights of other riparian owners are to be protected.

The riparian doctrine does not mean that no water may be diverted from a stream. In SMITH v. MORGAN, 187 N.C. 801 (1924), the Supreme Court said that a riparian owner may not take so much water from a stream that he materially injures those riparian owners below him. See also, HARRIS v. RAILROAD, 153 N.C. 542 (1910). Of course, whether there is a material injury depends somewhat upon whether a particular use is reasonable, and both of these factors are determined by the circumstances of each particular case.

It is clear that it is not unreasonable for a railroad riparian-owner to take a part of the flow of the stream for use in its locomotives. HARRIS v. RAILROAD, 153 N.C. 542 (1910). Furthermore, it has been established that it is not an unreasonable use for a power company to erect a dam in a stream for the purpose of generating electricity, even if this results in the diminution of the flow of the stream at certain times during the day. DUNLAP v. CAROLINA POWER AND LIGHT CO., 212 N.C. 814 (1938).

On the other hand, it is just as clear that a city cannot impound the waters of a stream for use by its citizens as a water supply, because, in doing this, the city is not exercising the right of a riparian owner to make reasonable use of water. PERNELL v. CITY OF HENDERSON, 220 N.C. 79 (1941).

There is an infinite variety of situations which might arise concerning whether a use of water is a reasonable use. Under the present law, if a person proceeds to divert water from a stream, hiw right to do so may be challenged and he may be required either to cease the diversion or to respond in damages, or both, if some court should determine that his use is not a reasonable one.

The matter of regulating the uses of water in a state which adheres to the riparian doctrine is a matter of no small moment. Vested rights have existed along each stream since the days of the first settlement, and the nature of those rights can only be evaluated by definition and by what the courts have said with respect to them. In 1906, the Supreme Court of North Carolina stated as follows. "A riparian owner is entitled to a reasonable use of the water flowing by his premises in a natural stream as an incident to his ownership of the soil and to have it transmitted to him without sensible alteration in quality or unreasonable diminution in quantity. While he does not own the running water, he has a reasonable use of it as it passes his land. As all other owners on the same stream have the same right, the right of no one is absolute, but it is qualified by the right of others to have the stream substantially preserved in its natural size, flow and purity and to protection against material diversion or pollution."

It is interesting to note that courts are aware of changing conditions and can broaden the scope of even definitions of riparian ownership, when required to do so, as may be noted from a 1938 decision of the Supreme Court of North Carolina which says:

" * * * The statement that riparian proprietors are entitled to the natural flow of the stream without diminution or obstruction and that no proprietor can diminish the quantity of water, which will otherwise descend to the proprietor below, are statements that are rather broader than they should be to accurately represent the law. A better statement is one which includes the element of reasonable use by each of the proprietors. Although it has been said that it is impossible to lay down a general rule in all cases, the rule that the upper proprietor has no right to use the water to the prejudice of the proprietor below him or that he cannot lawfully diminish the quantity is too broad, for it would give the lower proprietor superior advantages over the upper and in many cases give him in effect a moncpoly of the stream.

"A riparian proprietor has a right to make all the use he can of the stream so long as he does not pollute it or divert it from its natural channel and abstract so much as to prevent other people from having equal enjoyment with himself, or does not use the same in such an unreasonable manner as to materially damage or destroy the rights of other riparian owners. The rights of riparian owners in a running stream above and below are equal; each has a right to the reasonable use and enjoyment of the water, and each has a right to the natural flow of the stream subject to such disturbance and consequent inconvenience and annoyance as may result to him from a reasonable use of the waters by others. * *"

(Note: Use of material, from "Water - or your Life", by Arthur H. Carhart and pamphlet published by Claude L. Love, Assistant Attorney General, State of North Carolina on January 18, 1954, in this section regarding "Property in Water" is gratefully acknowledged.)

Ground Water

The North Carolina statute (113-8.1), pertaining to issuance of permits to use water for irrigation, is silent with respect to ground water. So far as has been determined by a careful examination of the General Statutes of North Carolina, the only law relating to ground water, except for the authority of the State Stream Sanitation Committee, pertaining to underground waters, is as follows:

Chapter 14. Criminal Law, Subchapter X. Offenses against the Public

Safety §14-287. - It shall be unlawful for any person, firm or corporation, after discontinuing the use of any well, to leave said well open and exposed; said well, after the use of same has been discontinued, shall be carefully and securely filled; Provided, that this shall not apply to wells on farms that are protected by curbing or board walls. Any person violating any of the provisions of this section shall be guilty of a misdemeanor, and upon conviction shall be fined or imprisoned, in the discretion of the court. (1923, C.125: C.S. 4426 (c).

Soil Conservation Districts (139-1 to 13, incl.)

The General Assembly during their 1937 Session enacted a Soil Conservation Districts Law. This act contains the legislative determination that it is necessary, in order to conserve soil resources and to control and prevent soil erosion that land-use practices contributing to soil-conserving land-use practices be adopted and carried out. The land-use practices include the following:

(1) Construction of terraces, terrace-outlets, check-dams, dikes, ponds, and ditches,
(2) Utilization of strip cropping, lister furrowing, contour cultivating, contour furrowing, farm drainage, and land irrigation;
(3) Seeding and planting of waste, sloping, abandoned, or eroded lands with water-conserving and erosion-preventing plants, trees, and grasses;
(4) Forestation and reforestation;
(5) Rotation of crops;
(6) Soil stabilization with trees, grasses, legumes, and other thick-growing soil-holding crops;
(7) Addition of soil amendments, manurial materials, and fertilizers for the corrections of soil deficiencies for promotion of increased growth of soil-protecting crops;
(8) Retardation of run-off by increasing absorption of rainfall; and
(9) Retirement from cultivation of steep, highly erosive areas, and areas now badly gullied or otherwise eroded.

This act sets forth the following declaration of policy: It is hereby declared to be the policy of the legislature to provide for the conservation of the soil and soil resources of the State; and for the control and prevention of soil erosion, and thereby to preserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, preserve wildlife, protect the tax base, protect public lands and protect and promote the health, safety, and the general welfare of the people of this State.

The State Soil Conservation Committee - A State Soil Conservation Committee, consisting of three ex-officio members, the Director of the State Agriculture Extension Service, the Director of the State Agriculture Experiment Station, and the State Forester; and four other members, the President, first Vice-President, and immediate past President of the State Association of Soil Conservation District Supervisors, and a resident of North Carolina appointed by the Secretary of the United States Department of Agriculture, was established by the Act.

Powers of the Committee - The act provides that the Committee shall have the following powers and duties:

(1) To offer such assistance as may be appropriate to the supervisors of Soil Conservation Districts in the carrying out of any of their powers and programs;

(2) To keep the soil conservation district supervisors informed of the activities and experience of all other districts, and to facilitate cooperation and an interchange of advice and experience between the districts;
(3) To coordinate the programs of the soil conservation districts;
(4) To secure the cooperation of the United States and any of its agencies and of the agencies of this State, in the work of the districts; and
(5) To disseminate information throughout the State concerning the activities and programs of the Soil Conservation Districts, and to encourage the formation of such districts in areas where their organization is desirable.

Creation of Soil Conservation Districts - The act contains the following provisions regarding creation of soil conservation districts:

(1) Any twenty-five (25) occupiers of land lying within the territory proposed to be organized into a district may file a petition with the State Soil Conservation Committee asking that a Soil Conservation District be organized to function in the territory described in the petition.

(2) Within thirty (30) days after such a petition has been filed with the Committee, it shall cause due notice to be given of a proposed hearing upon the question of the desirability and necessity, in the interest of the public health, safety, and welfare, of such district, and upon other pertinent matters.

(3) After such hearings, if the Committee shall determine, upon the facts presented at such hearing and upon such other relevant facts and information as may be available, that there is need, in the interest of the public health, safety, and welfare, for a Soil Conservation District to function in the territory considered at the hearing, it shall make and record such determination, and shall define, by metes and bounds or by legal subdivisions, the boundaries of such district.

(4) After the Committee has recorded such determination, it shall consider the question whether the operation of such district is administratively practicable and feasible. It shall hold a referendum within the proposed district upon the proposition of the creation of the district, and shall cause due notice of such referendum to be given. It shall publish the results of such referendum, and shall thereafter determine whether the operation of the district within the defined boundaries is administratively practicable and feasible.

(5) If such determination is favorable, the Committee shall appoint two temporary supervisors to act as the governing body of the district. These temporary supervisors shall serve until supervisors are elected or appointed, and have qualified, as provided in Sections 6 and 7 of the act. Such district shall be a governmental subdivision of the State and a public body corporate and politic, upon the taking of certain prescribed preceedings.

(6) After issuance by the Secretary of the State of the certificate of organization of the Soil Conservation District, nominating petitions may be filed with the State Soil Conservation Committee not less than ten (10) nor more than sixty (60) days preceding the first day of

election week as provided in Section 6 of the act, to nominate candidates for a Soil Conservation Committee in each county of the District to be composed of three (3) members. The State Committee shall pay all of the expenses of such election, shall supervise the conduct thereof, shall prescribe regulations pertaining thereto, and shall publish the results thereof. The duties of members of the County Committees are set forth in Section 6 of the act.

Section 7 of the act provides that the governing body of any soil conservation district shall consist of the Chairmen of the County Committee within the district, together with such additional supervisor or supervisors as may be appointed by the State Committee pursuant to Section 7 of the act, except that, when a district is composed of only one county, the members of the County Committee shall be members of the Board of Supervisors of the district which such county comprises, and prescribes certain administrative procedures of the governing body.

Powers of Soil Conservation Districts - Sections 8 and 9 of the act indicate the powers of Soil Conservation Districts and the supervisors thereof as follows:

(1) To carry out preventive and control measures within the district.
(2) To cooperate, or enter into agreements with, and, within the limits of appropriations duly made available to it by law, to furnish financial or other aid to, any agency, governmental or otherwise, or any occupiers of land within the district, in the carrying on of erosion-control and prevention operations within the district;
(3) To acquire, maintain, administer, improve, sell, lease, and otherwise dispose of, any property, real or personal;
(4) To make available, to land occupiers within the district, machinery, equipment, fertilizer, seeds, seedlings, and other material or equipment; as will assist operations upon their lands for the conservation of soil resources and for the prevention and control of soil erosion;
(5) To construct, improve, and maintain structures;
(6) To develop comprehensive plans for conservation of soil resources and for the control and prevention of soil erosion;
(7) To act as agent for the United States in connection with soil-conservation, erosion-control, and erosion-prevention projects;
(8) To take specified legal actions;
(9) To require contributions from, and performance of agreements or covenants by, land occupiers; and
(10) To adopt regulations pertaining to necessary engineering operations, methods of cultivation, cropping programs, tillage practices, retirement of areas from cultivation, and other means, measures, operations, and programs as may assist conservation of soil resources and prevent or control soil erosion in the district.

Miscellaneous Provisions of the Act.- Sections 10, 11, 12, 13, and 14 of the act provide for enforcement of land-use regulations, performance of work under the regulations by the supervisors, cooperation between districts, discontinuance of districts, and dividing of large districts, respectively.

(Note: The Governor, in a letter to the State Soil Conservationist, member and executive secretary of the State Soil Conservation Committee, designated the Committee as the State Agency to approve applications from local authorities made pursuant to the Watershed Protection and Flood Prevention Act. (Public Law 566,

83rd Congress, approved August 4, 1954).)

State Planning Board

143-171. Board established as an advisory agency of State. - The State Planning Board is hereby established as an advisory agency of the State, under the direction of the Governor and as more fully set forth hereinafter.

143-172. Membership. - The State Planning Board shall consist of nine members, appointed by the Governor, as follows: Five members to be chosen from State officers or heads of departments or boards, one of whom shall be the Director of the Department of Conservation and Development; at least one representative from the University of North Carolina, and the remaining members to be chosen from other citizens of the State.

143-174. Functions of Board. - It shall be the function and duty of the State Planning Board to make studies of any matters relating to the general development of the State, or regions within the State, or areas of which the State is a part, with the general purpose of guiding and accomplishing a co-ordinated, adjusted, and efficient development of the State. Upon the basis of such studies and in accordance with the present and future needs and resources, the Board shall present, from time to time, reports, plans, maps, charts, descriptive matter, and recommendations relating to such conservation, wise use, and planned development of the material and human resources of North Carolina as will best promote the health, safety, morals, order, convenience, prosperity, and welfare of the people of the State.

143-175. Adoption of plans and recommendations; publicity programs; co-operation with other agencies; advice and information relative to State planning; proposed legislation. - The State Planning Board may, from time to time, adopt, in whole or in part, such plans and recommendations as, in its judgment, may be deemed wise and proper; and may, from time to time, alter, amend, and add to such plans; may, in the interest of promoting understanding of, and compliance with, their recommendations, publish and distribute such plans and recommendations and may employ such means of publicity and education as it may determine; may confer and co-operate with other agencies, Federal, State, regional, county, or municipal officers, or departments on matters relating to State planning; and may prepare and submit drafts of legislation for the carrying out of any plans they may adopt.

(Note: The State Planning Board, on October 15, 1937, submitted to the Governor its First Planning Report on Water Resources of the State, with the statement that the complexity of the problem and a deficiency of basic data combined to make it impossible to present at that time a complete co-ordinated plan for the future development of the water resources, and expressing the belief that this report would prepare the way for the development of the long-time plan.)

Recreation Commission (143 - 205 to 210, incl.)

205. There is hereby created an agency to be known as the North Carolina Recreation Commission.

207. The Recreation Commission shall consist of seven members, appointed by the Governor, and the Governor, Superintendent of Public Instruction, Commissioner of Public Welfare, and Director of the Department of Conservation and Development as members ex-officio.

In making appointments to the Commission, the Governor shall choose persons, in so far as possible, who understand the recreational interests of rural areas, municipalities, private membership groups, and commercial enterprises. The Commission shall elect, with the approval of the Governor, one member to act as chairman. At least one member of the Commission shall be a woman, and at least one member shall be a Negro. The Commission shall meet quarterly in January, April, July, and October, on a date to be fixed by the chairman. The Commission may be convoked at such other times as the Governor or chairman may deem necessary.

208. It shall be the duty of the Commission:
(1) To study and appraise recreational needs of the State and to assemble and disseminate information relative to recreation.
(2) To co-operate in the promotion and organization of local recreational systems for counties, municipalities, townships, and other political subdivisions of the State, and to aid them in designing and laying out recreational areas and facilities, and to advise them in the planning and financing of recreational programs.
(3) To aid in recruiting, training, and placing recreation workers, and promote recreational institutes and conferences.
(4) To establish and promote recreation standards.
(5) To co-operate with State and Federal agencies, the Recreation Advisory Committee, private membership groups, and with commercial interests in the promotion of recreational opportunities.
(6) To submit a biennial report of its activities to the Governor.

209. The Commission is authorized to accept grants of funds made by the United States or any agency thereof; to accept gifts, bequests, devises and endowments; and to act jointly with any other State agency, institution, department, board, or Commission in order to carry out the Recreation Commission's objectives and responsibilities. No action of the Commission, however, shall be allowed to interfere with the work of any other State agency.

210. The Governor shall name a Recreation Advisory Committee consisting of thirty members, one of whom shall be named to act as chairman. Members shall represent, in so far as feasible, all groups and phases of beneficial recreation in the State. The Committee shall meet once each year with the Recreation Commission at a time and place to be fixed by the Governor. The Committee shall act in an advisory capacity to the Commission, discuss recreational needs of the State, exchange ideas, and make to the Commission recommendations for the advancement of recreational opportunities.

State Stream Sanitation Committee (143-211 to 215.7)

The General Assembly of North Carolina, on April 6, 1951, ratified an act to rewrite Article 21 of Chapter 143 of the General Statutes relating to stream sanitation. This act contains a declaration of policy as follows: It is hereby declared to be the policy of the State that the water resources of the State shall be prudently utilized in the best interest of the people. To achieve this purpose, the government of the State shall assume responsibility for the quality of said water resources. The maintenance of the quality of the water resources requires the creation of an agency, charged with this duty and authorized to protect the water requirements for health, recreation, fishing agriculture, industry, and animal life. This agency shall establish and maintain a program, adequate for present needs and designed to care for the future needs of the State.

The act created within the State Board of Health a permanent committee,

to be known as the "State Stream Sanitation Committee", which shall be composed of eight members as follows: The Chief Engineer of the State Board of Health, ex-officio, the Chief Engineer of the Division of Water Resources, Inlets, and Coastal Waterways, Department of Conservation and Development, ex-officio, and six members appointed by the Governor. Of these six members, one shall at the time of appointment be actively connected with and have had production experience in the field of agriculture, one shall at the time of appointment be actively connected with and have had experience in the wildlife activities of the State, two shall at the time of appointment be actively connected with and have had practical experience in waste disposal problems of municipal government, and two shall at the time of appointment be actively connected with and have had industrial production experience in the field of industrial waste disposal. Ex-officio members shall have all the privileges, rights, powers, and duties held by appointed members except the right to vote.

The duties of the Committee are (1) to develop and adopt classifications of State waters, (2) to survey all waters and identify those which ought to be classified, (3) to assign a classification to each identified water, and (4) to hold public hearings regarding assigned classifications.

After the effective date of the assignment of classifications pertaining to the identified waters of any watershed within the State, no person shall, to an extent which would adversely affect the condition of the receiving water within such watershed in relation to any of the standards applicable to such water, (1) make any new outlet into the waters of such watershed, (2) construct or operate any new disposal system within such watershed, (3) alter or change the construction or the method of operation of any existing disposal system within such watershed, (4) increase the quantity of sewage, industrial waste, or any waste discharged through any existing outlet or processed in any existing disposal system, or (5) change the nature of the sewage, industrial waste, or other waste discharged through any existing outlet or processed in any existing disposal system.

The Committee has the following powers as to permits to make new outlets, construct or operate new disposal systems, alter or change the construction or method of operation of existing disposal systems, or to increase the quantity or change the nature of wastes discharged:

a. To grant a permit with such conditions attached as the Committee believes necessary to achieve the purposes of control of new sources of pollution.
b. To grant any temporary permit for such period of time as the Committee shall specify, even though the action allowed by such permit may result in pollution or increased pollution, where conditions make such temporary permit essential; and
c. To modify or revoke any permit upon not less than 60 days' written notice to any person affected.

The act sets forth procedures as to applications and permits, and as to hearings and appeals in connection with action on applications. It provides that the Committee may issue special orders directing any person responsbile for pollution to take action to alleviate or eliminate pollution, that no person shall discharge waste in violation of a special order issued by the Committee, that no special order shall be issued except after hearing unless the person affected thereby consents, and that the person against whom a special order is issued shall have the right to appeal.

The act provides that the Committee shall encourage voluntary action in remedying pollution situations. Any person may submit to the Committee proposed plans for installation of treatment works for approval. The Committee shall make thorough investigations of proposed plans for voluntary action, shall have the power to issue certificates of approval of such plans, may specify further rules applicable to granting of certificates, and shall have power to entertain, and act on, applications for modification of any certificate of approval.

The Committee has the following general powers in addition to the specific powers prescribed elsewhere in the act:

a. To adopt, modify, and revoke official rules of procedure.
b. To conduct such investigations as it may deem necessary to carry out its duties.
c. To conduct public hearings.
d. To delegate its powers to one or more of its members or to one of its qualified employees.
e. To initiate actions in the appropriate Superior Court.
f. To agree upon and enter into settlements or compromises and to prosecute appeals or other proceedings.
g. To conduct scientific experiments, research, and investigations.
h. To cooperate and enter into contracts with State agencies, institutions, municipalities, industries, and other persons.
i. To act in cooperation with the State Board of Health in local administration of Public Law 845, (See "Federal Laws pertaining to Water Resources" herein), passed by the Congress in 1948, and future legislation by the Congress relating to water quality.
j. To consult with qualified representatives of adjoining states.

The act provides that the Committee shall codify its regulations and rules, and from time to time shall revise and bring up to date such codifications, and that its hearings shall be held upon not less than 30 days written notice and shall be open to the public. The following provisions are applicable in connection with the Committee's hearings:

a. Full and complete records shall be made.
b. In so far as practicable, procedures applicable in civil action in the Superior Court shall be followed.
c. Action with regard to subpoenas shall be in accordance with procedures and rules of law.
d. The burden of proof shall be upon the Committee or upon the person at whose instigation the hearing is held.
e. The decision or order of the Committee must be supported by appropriate evidence.
f. The committee shall afford opportunity for presentation of findings of fact, conclusions of law, and briefs.
g. Committee orders and decisions shall set forth findings of fact and conclusions of law.

The act provides for judicial review of the final orders and decisions of the Committee, indicates actions which constitute violations, and sets forth penalties for violation.

Comments on North Carolina Water Laws by Interested Persons

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

North Carolina follows the riparian doctrine and makes no departure from the general rules of the doctrine.

The general pollution law of North Carolina is administered by the Stream Sanitation Committee, a body within the Board of Health. The law deals with surface and ground waters including the portions of the Atlantic Ocean over which the State has jurisdiction. The law is substantially the same as the pollution laws in Louisiana.

The Board of Conservation and Development was created and directed to investigate water supplies and water powers and to make plans and recommendations for the promotion of their more profitable use. The board is authorized to take any measures necessary to accomplish these purposes.

Permits from the Department of Conservation and Development must be obtained by all persons using water for irrigation purposes when the waters are to be taken from streams, rivers, creeks or lakes in such an amount as to substantially reduce the volume of flow. Before obtaining the permit, the person must file a proposed irrigation plan and survey with the department. The department has authority to investigate the plan and will issue the permit if the plan conforms to public safety and interest.

The North Carolina laws on drainage and flood control are similar to those of Louisiana.

North Carolina has not entered any interstate compacts in connection with water problems.

In the spring of 1954, the governor appointed the Water Resources Advisory Committee and directed it to prepare a report to be presented to the 1955 General Assembly. The report is not yet available.

Pamphlet entitled "The States and Their Water Resources", The Council of State Governments, April 20, 1955

Among the Southeastern States, South Carolina is the first to have made a major study of these problems. The report of the South Carolina Water Policy Committee, released in 1954, has been widely distributed both within and without the State. The last two sessions of the South Carolina legislature have debated its recommendations, which basically provide for the adoption of the appropriation doctrine to govern the use of surface waters . . . .

In North Carolina, at the request of the Governor, a study agency gave careful consideration to the problems of water supply and water rights and has recommended a basic water rights statute very similar to that proposed in South Carolina.

September 1955 Issue, Journal, American Water Works Association

North Carolina was made painfully aware of the problem of water resources by the severe drought of 1954, as well as by earlier experiences. In fall 1953, Governor Umstead appointed the Water Resources Advisory Committee to consider the problem. This group later drafted legislation which was introduced in the 1955 General Assembly. These bills, S.B. No. 153 - H.B. No. 298, state: The general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that waste or unreasonable use, or unreasonable method of use, of water be prevented, and that the conservation of such water be exercised with the view

to the reasonable and beneficial use thereof in the public interest.

. . . . Natural bodies of water are public wealth of the State and subject to appropriation in accordance with the provisions of the proposed act, provided, however, that the act shall not deprive any person of any vested right in the use of water.

These are the precedences that future appropriations of water will take: (1) water for human consumption; (2) water for agriculture and industrial production; and (3) water for other general purposes.

This legislation was not passed by the General Assembly. There are many obvious difficulties to be resolved in changing from common law to the completely different approach of appropriation.

A law (H.B. 962) was enacted which will enable the governor - in a water emergency in a specified area - to appropriate water within that locality and to regulate its use. This legislation provides for a Board of Water Commissioners whose assigned duties are as follows:

(1) To carry out a program of planning, research, and education concerning the long-range use of water resources.
(2) To maintain a general inventory of water resources
(3) To notify municipalities or other governmental units of potential water shortages or emergencies, with recommendations
(4) To file with the governor and the General Assembly a biennial report of the activities with recommendations for improving, conserving and using water resources
(5) To make available to the public information on all legislation recommended by the board.

Reports on Water Resources, The Council of State Governments, October 1955, EX-298

"Water Resources of North Carolina", Department of Conservation and Development, 1955, is an introductory eleven-volume inventory of water resources, undertaken in connection with the need for a new comprehensive water code for the state. The succeeding ten volumes will contain detailed information and data pertaining to specific basins. The present report provides a background for subsequent volumes and discusses the influence of regional factors. It notes water shortages in the State and outlines the use of water for domestic and municipal purposes, for recreation, and for hydroelectric power. Problems of surface water, ground water, quality of water, and abatement of stream pollution are discussed. Several related subjects, such as soil conservation, watershed management, navigation, flood control, and beach erosion also are considered. Finally, the status of water law is reviewed with careful consideration of proposals made for changes in the laws of North Carolina and other states. The following recommendations are made:

a. Proper methods of conservation and water use must be adopted, with storage in time of abundance, giving first priority to domestic and municipal uses.
b. More funds are needed for topographic mapping and for the State Stream Sanitation Committee.
c. Programs pertaining to proper land-use practices (strip cropping, contour planting, terracing, grasslands, floodwater retarding structures, etc.) should be encouraged to reduce floodwater and increase infiltration rates into the soil. Support should be given districts under

provision of Federal Small Watershed Act of 1954.

d. Efforts should be made to obtain authorizations for needed flood control and navigation projects, such efforts to include offer of cash contributions to federal government by local interests.
e. Funds are needed for a full-time beach erosion engineer.
f. Action should be taken to provide a sound legal foundation for resolving conflicts in water matters.

Paper presented before the North Carolina League of Municipalities by J. Reuel Armstrong, Solicitor, Department of the Interior, October 24, 1955 at Durham, North Carolina

. . . You are to be congratulated on your efforts to formulate a comprehensive water policy before the situation becomes too critical. It is always much easier to grapple with troubles while they are relatively small. As one of your water engineers has said, your State "has been endowed by nature with generous water resources of highest quality. These are a priceless heritage to be used for the best interests of the State. . . . Man can accumulate not more than a trifle of the water that falls to the earth. His wisest, surest way to gain by this is to study the waters that fall, their seasons, their qualities, and their potentials and then use this knowledge to the end that all may benefit." I understand, too, from a paper of Mr. Jarrett of the State Board of Health that your program of development of public water supplies began in 1921 and that on the whole it has progressed remarkably well, especially from a sanitary point of view, but it has not been until this year that your forward looking General Assembly and State officials decided to follow what Clarence Davis, the Under Secretary of the Department of the Interior, calls the proper approach. He says: "A water policy must not confine itself merely to municipal water supplies, nor to control of floods, nor to the irrigation of land, nor yet to the control of pollution. It must be broad and comprehensive; it must consider all of these problems as a unified part of a program of the development of water resources".

Please believe me that I am not posing as an expert in North Carolina water law, but in order to familiarize myself with your troubles I studied the laws that the last session of your General Assembly enacted.

Prior to the recent laws the State Board of Health was probably the most active governmental agency in the field of water regulations. It was authorized, and still is, to control and examine water to determine the suitability for drinking and other domestic purposes. It issues the rules and regulations necessary to prevent contamination. It advises cities and towns and requires the submission of plans to regulate water supplies and sewage disposal. The State Board of Health has a State Stream Sanitation Committee composed of eight members, which assumes the responsibility for the quality of the State's water resources and establishes methods for protection of health, recreation, fishing, agriculture and animal life. It can prevent the improper use of water which would cause additional pollution and it can approve pollution abatement projects.

In 1925 the General Assembly created the Department of Conservation and Development whose general duties are to promote commerce and industry and the natural resources of North Carolina. It is responsible for coordinating existing scientific investigations and State agencies interested in formulating and promoting sound policies of conservation and development. It collects, classifies and makes public basic data which are important in rounding out any type of policy. A 1951 statute charged the Department with an important

administrative function, namely, the issuance of permits for the use of water when the applicant expects to take water for the purpose of irrigation in such amounts as to substantially reduce the volume or flow of a stream. Within the Department is the Division of Water Resources, Inlets and Coastal Waterways, whose functions are concerned with water resources conservation and development.

The State Board of Water Commissioners was authorized by an act ratified on May 6, 1955. It is a board composed of seven members appointed by the Governor, one to represent agriculture, one to represent the electric power industry, another representing municipalities, another to represent other industries. The Water Commissioners' general functions are in the field of research, planning education, and advice. It does have authority to notify municipalities of potential water shortages and to make recommendations to them. If the cities fail to follow the recommendations, they become ineligible for emergency diversions of water.

Chapter 1195 of the 1955 session laws provides two or more political subdivisions, including public corporations, with authority to organize water and sewer authorities. It also authorizes the political subdivisions to convey the water and sewer systems to such an authority when it is created and permits the political subdivisions to enter into contracts providing for supply services from the authority. The water and sewer authorities have no power to acquire by eminent domain water, water rights or lands having water rights attached without first securing from the Board of Water Commissioners a certificate authorizing such acquisitions. The Water Commissioners are required to hold public hearings on the matter and may issue certificates only to such projects as have met the test of using the water most beneficially on a statewide basis. At the hearing the Board must determine the necessity for the project and whether it will promote storage and conservation of water. It must investigate the damage done to present users in the watershed, the feasibility of alternate sources of supply, and the detriment to present and potential users of such alternate sources of supply. The Act then provides for an action of damages for any injury to a lower riparian owner. In other words, the Board has a big job cut out for itself when presented with such an application, but in any event it appears to me that the factors that it will consider before issuing a certificate are well thought out and pertinent to the cause of conservation.

It is worth noting, I believe, that if one municipality chooses to construct a water or sewer project, it does not have to obtain such a certificate from the State Board, nor are any hearings conducted. The new provision applies only when two or more governmental agencies join in setting up an authority. Any municipality in your State has the right to condemn land and water for municipal purposes. Of course, with the condemnation goes the correlative right of compensation for the taking of someone else's property right.

The last session of the General Assembly gave the State Board of Water Commissioners the additional job of obtaining and studying data on the water resources of the State. It charges them with the duty of planning a long-range water resource conservation program and recommending to the Governor and the Assembly methods for improving, conserving and using water. I truse that these studies will be coordinated with the excellent work which the Department of Conservation and Development has been conducting on the water resources by virtue of funds allocated by the Council of State, approved by the Governor and by the Advisory Committee to the Board. I have read the first of the 11 volumes that are intended and find that it is an excellent beginning. I commend it to your reading when the proper time comes.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

Chapter 857, 1955 Session Laws of North Carolina (House Bill No. 962), creates a State Board of Water Commissioners appointed by the governor; prescribes the powers and duties of the board, including the power (a) to carry out a program of planning, research, and education concerning the conservation and use of water resources, (b) to maintain a general inventory of water resources, and (c) to authorize counties, cities and towns during water emergencies, after certain requirements are met, to divert such water in the emergency area as is necessary to meet the needs of human consumption, necessary sanitation and public safety; and provides that the governor may direct the cooperation and assistance of all State agencies and officials in achieving the objectives of the act.

Some Current and Proposed Water-Rights Legislation in the Eastern States, By Harold H. Ellis, Iowa Law Review, in process

In a few States, including Minnesota, Wisconsin, and North Carolina, a permit may need to be obtained from some State agency to take water for irrigation or other purposes from a watercourse, or, in some cases, from a ground water source. But in most such states it seems doubtful whether these permits, when granted, create any substantial property rights in the permittees. Moreover, such statutes often include important exceptions or limitations. For example, a Maryland statute which relates to both surface and ground waters appears to except the diversion and use of such waters for "domestic and farming purposes", and also excepts ponds and low capacity wells.

* * * * * * *

The North Carolina Legislature enacted a statute in 1951 (Gen. Stat. of N.C., Sec. 113-8.10) which requires simply that permits be obtained from the Department of Conservation and Development before utilizing waters in a stream or lake for the "purpose of irrigation" in such an amount as to "substantially reduce the volume or flow thereof". The Director is "authorized to investigate such a plan as to safety and public interests and to approve plans and specifications and issue permits". Since the statute says essentially no more, it seems rather questionable whether any substantial legal rights as against riparian owners or others are created in the applicant by the issuance of such a permit.

No definite regulations or standards appear to have been promulgated to date as an aid to the administration of the statute. Each permit issued is generally granted for an indefinite period of time, but contains express reservations to the effect that: (1) it will be revoked automatically if at any time it interferes with any institutional or municipal water supply, and (2) it will be reviewed with the idea of issuing a new permit if others later request the use of water from the same stream. While permits are not expressly made subject to riparian rights, they are "continually held in mind and every possible action is taken to protect such rights". Each permit includes a provision regarding the rate of diversion. In conformity with a provision in the statute which authorizes the Director to investigate the applicant's proposed irrigation plan "as to safety and public interest", the Director sometimes includes such express conditions in the permit as may be considered necessary to insure such protection.

Neither the Wisconsin, Minnesota, nor North Carolina statutes mention anything concerning what effect, if any, priority in time of application would have. While the determination of this question by each of the administering agencies has not been definitely ascertained, it would appear that priority in

time has little, if any, significance. Apparently, none of these statutes, as interpreted and administered, would purport to have any substantial effect upon riparian rights, other than that certain administrative restrictions have been imposed upon the exercise of such rights.

We now turn to a consideration of some specific and rather extensive legislation on water rights which has been proposed, but not yet enacted, in five states, - South Carolina, North Carolina, Arkansas, Michigan, and Wisconsin. All of these proposed bills would apply solely to the use of surface watercourses, with some attention to diffused surface waters, except for the Wisconsin proposal, which would also apply to ground waters.

* * * * * *

The North Carolina and Wisconsin proposals would involve an expansion and modification of the existing permit systems in those States, while the other proposals would constitute a definite, though only a partial, departure from the riparian common law systems in those States. All would shift toward some version of the prior appropriation doctrine which has developed in the West. They vary somewhat in the type of water sources to which they would apply, in the extent to which they purport to abrogate or limit riparian rights, and in certain other respects. But several identical or similar provisions appear in all of them. All would involve regulation by a State administrative agency.

* * * * * *

A bill, S.B. 153 - H.B. 298, substantially similar to the original South Carolina proposal, was prepared for introduction into the North Carolina Legislature in 1955. This constituted one of a number of legislative proposals which were given consideration following a 1955 report on Water Resources of North Carolina by the North Carolina Department of Conservation and Development, Division of Water Resources, and the Committee on Water Resources, Inlets and Coastal Waterways. This report recommended, among other things, that permits should be required for all uses of water for all purposes, instead of only for irrigation, as is the case under the existing North Carolina law.

I am informed, however, that the proposed bill was killed in the Committee on Conservation and Development, and never was voted on by the Legislature. The bill differed from the original South Carolina proposal in relatively few respects. It provided, for example, that: "Where future appropriations of water for different purposes conflict, they shall take precedence in the following order, namely: (1) water for human consumption; (2) water for agricultural and industrial production; and (3) water for other beneficial purposes".

It should be noted, however, that the proposed bill for North Carolina would not make as much a departure from the existing water laws of the State as would the South Carolina proposal, since existing legislation in North Carolina already requires permits for irrigation purposes. While the above-discussed proposal was not enacted, at least three bills were passed in 1955 which would have some bearing on water rights in the State. One of these bills, H.B. 962, includes a statement of policy similar to that in the proposed bill for South Carolina. But the bill goes no further than (1) to create a Board of Water Commissioners to study the water resource situation and problems and make recommendations and (2) to provide the Board with certain powers to act in emergency situations. Whenever the Governor declares the existence of a water emergency within a particular area of the State, the Board may authorize any county, city, or town in such emergency area to divert all or any part of the water in the area to take care of the needs of human consumption and necessary sanitation and public safety, but for no other purposes. Anyone making such an emergency diversion would be liable to others who suffer any loss or damage on account of it, and would be required to post bond. Such diversions could continue only during the emergency period and would not

be permitted in a subsequent year unless reasonable plans had been acted upon to eliminate future emergencies by adequately enlarging one's water supply.

Two other bills, passed in the 1955 session which have some bearing on water rights in North Carolina, include H.B. 809, which permits the formation of water and sewer authorities, and H.B. 1035, which permits the joint acquisition, construction, improvement, maintenance and operation of water supply facilities by two or more municipalities.

The Movement for New Water Rights Laws in the Tennessee Valley States, by Robert H. Marquis, Volume 23, Number 7 (April 1955), Tennessee Law Review

The priority of water use for irrigation in North Carolina is negatively recognized by a statute forbidding use of streams, rivers, creeks and lakes for irrigation purposes "in such an amount as to substantially reduce the volume thereof" without first obtaining approval of the Director of the Department of Conservation and Development.

* * * * * * *

As previously indicated, North Carolina has recently adopted a statute prohibiting substantial withdrawals of water for irrigation without first obtaining a permit. Such a permit system should protect users of water for purposes other than irrigation. It may also provide a method of bringing about equitable results among competing irrigators, and of giving permittees some assurance against issuance of other permits which would impair their investments while preserving (through appropriate limitation and conditioning of permits) reasonable flexibility. Other states have employed a similar approach on a broader basis (see Md. Code Ann., Art. 66C, §§666-681 (Flack, 1951); Minn. Stat. Ch. 105, §§ 37-64 (1949); Wis. Stat. § 31.14 (1949)).

State Water Legislation, 1955, The Council of State Governments, BX-299, December 1955

Senate Bill 308 permits industries to obtain a five-year amortization allowance for income tax purposes for the cost of any sewage treatment facilities. The act also provides that such facilities shall be exempt from local property taxation if the State Stream Sanitation Committee certifies that the facilities are necessary and meet all requirements of the Committee.

Chapter 1131, Session Laws, 1955 (S.B. 251) provides that a municipality against which an abatement order is issued shall use every means at its disposal to curb pollution. Municipalities are authorized and required, if financially able, to issue revenue bonds to finance sewage treatment plants even when the voters turn down a general obligation bond issue for that purpose.

SECTION II

WATER LAWS OF STATES OTHER THAN NORTH CAROLINA AND ACTION THEREOF TOWARD FUTURE LEGISLATION

ALABAMA

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Alabama is presently using the riparian doctrine but has no written law on the subject. In interpreting the doctrine in relation to ground water, the supreme court stated that "although landowner may pump or draw or drain underground waters without liability to neighboring landowners when proper for natural and legitimate use of his own land, he may not in an unreasonable manner force and increase flow to divert water from neighboring lands to some use disconnected with improvement and enjoyment of his own property", and that "a landowner has right to reasonable and beneficial use of underground waters on his property".

Alabama has a comprehensive pollution law similar to the one in Louisiana (information regarding which is contained herein). The only dissimilarity is that the Water Improvement Advisory Commission, which administers the pollution law, also administers the water conservation laws of the state.

Alabama has no statutes concerning irrigation or irrigation districts.

The present agency of the State of Alabama dealing with water conservation is the Water Improvement Advisory Commission, which is composed of the State Health Officer, the Director of the Department of Conservation, the Commissioner of the Department of Agriculture and Industries, the State Geologist, one member representative of municipal government, one member representative of county government, one member from the University of Alabama, one member from Alabama Polytechnic Institute, one member representative of wildlife conservation, and six members respectively representative of the following six industries of the state, VIZ: mining, textiles, chemicals, lumbering, paper, and metals. The functions of this Commission at the present time are mainly advisory, and are concerned mainly with water pollution. The Commission is required to make surveys and to study and investigate problems of purity and conservation in cooperation with other agencies, to advise new industries in regard to pollution, to control and require correction of pollution that is creating a health hazard, and to make investigations or inspections to insure compliance with any of its rules or orders adopted.

The laws of Alabama on drainage and flood control are similar to the laws of Louisiana (See "Louisiana" herein).

Alabama has no interstate compacts or agreements in connection with its water policy.

The Alabama Legislative Reference Service has prepared for the Alabama Legislative Council a proposed bill which would give the Alabama Water Improvement Advisory Commission regulatory powers over ground-water conservation. The bill provides that any person desiring to drill a well shall apply to the commission for a permit; that any person abandoning a well shall seal it and notify the commission; that the driller of a well shall upon the request of the commission keep a record of the depth, thickness, and character of the different strata penetrated and character of any water encountered; and that the driller of a well shall submit samples of well cuttings and an estimate

of the volume of water available. The bill provides that the commission shall collect, coordinate, and disseminate information relating to ground-water resources, cooperate with other governmental departments and other states, and control all existing and future wells in the state.

Sept. 1955 Issue, Journal, American Water Works Association

There has been considerable legislative activity in Alabama. (Note: The information regarding Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama, contained on pages 848-850, Sept. 1955 Issue, Journal, American Water Works Association, was taken from a paper presented at the Annual Conference of the Association in Chicago on June 13, 1955 by G. S. Rawlins, Vice-Pres., J. N. Pease & Co., Charlotte, N. C. Mr. Rawlins stated that "information is not available for Mississippi, West Virginia, or Louisiana".)

The Movement for New Water Rights Laws in the Tennessee Valley States, by Robert H. Marquis, Volume 23, Number 7 (April 1955), Tennessee Law Review

Legislation providing for an official study of water resources in Alabama is expected to be introduced when that State's legislature reconvenes in May of this year.

Report on Water Resources, The Council of State Governments, October 1955, EX-298

A report to the Legislative Council of Alabama by the Legislative Reference Service, October 27, 1952, briefly outlines the problems that have developed in the state in connection with ground water resources. Common law rights prevail in Alabama, giving property owners complete ownership of the land and underground water. The only limitation on pumping or drawing of water is that it must be for natural and legitimate use on the owner's land.

The report recommends that (1) the conservation of ground water be the responsibility of the same agency that is concerned with pollution, the Water Improvement Advisory Commission: (2) in order to regulate the location of wells, any owner be required to obtain a permit from the Commission before constructing a well; and (3) there be regulation of free-flowing wells, and it be required that all abandoned wells be effectively sealed off to prevent impurities from entering.

State Water Legislation, 1955, The Council of State Governments, EX-299, December 1955

Act 549 creates a joint interim committee to study problems of water pollution in the state. The committee, consisting of two members of the House and one Senator, is to submit its report to the 1957 session.

ARIZONA

Reports and Recommendations, October 1943, of Committee of the National Reclamation Association

The constitution contains no direct reference to ground waters. It does provide:

"The common law doctrine of riparian water rights shall not obtain or be of any force or effect in the State."

"All existing rights to the use of any of the water in the State for all

useful or beneficial purposes are hereby recognized and confirmed."

The present statute states:

"The water of all sources, flowing in streams, canyons, ravines or other natural channels, or in definite underground channels, whether perennial or intermittent, flood, waste or surplus water, and of lakes, ponds and springs on the surface, belongs to the public, and is subject to appropriation and beneficial use, as herein provided. . . .

Groundwater Legislation in Arizona, State Land Department, Bulletin No. 301, 1954

An act, approved by the Governor on October 3, 1945, provides for a record of wells and prescribes certain powers and duties of the State Land Commissioner in relation to ground water.

An act, approved by the Governor on April 1, 1948, contains a declaration of public policy for regulation of the use of ground water, defines ground-water basins and subdivisions, and establishes regulations for the designation and determination of critical ground-water areas.

An act, approved by the Governor on March 18, 1953, prohibits the drilling of new irrigation wells, having a capacity in excess of one hundred gallons per minute, in a large area in the central valley of Arizona, in order to prevent further depletion of the ground-water resources thereof, and provides for permits for replacement wells, for deepening existing wells, and for completion of wells substantially commenced.

An act, filed in the office of the Secretary of State on April 22, 1954, transfers the jurisdiction, powers and duties vested in the Underground Water Commission, relating to the control, supervision, distribution and use of ground waters, to the State Land Department, and retains the previously declared critical ground-water areas.

Reports on Water Resources, The Council of State Governments, October 1955, EX-298

A report by the Underground Water Commission, January 1, 1953, contains conclusions and recommendations based on public hearings and studies made by consultants; discusses state's ground water resources, possible future situation, and conservation measures; gives an economic evaluation of ground water in the state's economy; contains a legal study of judicial decisions and laws and factors to be considered in ground water legislation; and includes a summary of hearings held.

The report makes the following recommendations:

Enact underground water legislation based on doctrine of correlative rights or other theory giving equitable apportionment in underdeveloped areas.

Additional pump irrigation should be prohibited in certain areas except by specific permission of agency.

Districts should be established in over-developed areas, enabling users to determine cut-back in water use by vote.

Permit industries and municipalities to acquire rights to use underground

water in over-developed areas by purchase of existing agricultural rights.

Domestic and stock watering uses should have superior rights.

Law should be administered by a commission and water engineer.

Commission should cooperate with various federal agencies to provide proper program of watershed management.

ARKANSAS

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Although Arkansas applies the riparian rights doctrine, there are no statutes on the subject. A report of the Arkansas Legislative Council sums up the present law as follows:

"There exist no statutes which govern or regulate the use of ground water or subsurface water in this State. Neither have we been able to find any Supreme Court decisions wherein the rights to the use of ground water have been litigated. From this complete absence of precedent, we can only conjecture as to what course such litigation would take if brought before our courts. We do know that Arkansas has followed the riparian doctrine in regard to the use of surface water rights. The latest pronouncement by the court on surface water rights is found in Thomas V. LaCotts, Law Reporter, May 18, 1953, Volume 96, No. 19. There the court said that a riparian owner is entitled to the unimpaired natural flow of a stream over his land, but this right is subject to reasonable use by upper proprietors. In other words, the court adopts the riparian owner view subject to reasonable use. In applying this pronouncement to any future litigation on ground water rights, we are of the opinion that the court would follow the American doctrine of reasonable use . . . "

In 1949, Arkansas enacted a law dealing with artesian wells. The law merely provides that an owner or tenant, who depends on artesian well water for home consumption and whose supply has become inadequate because of an uncapped, abandoned artesian well within his vicinity, may petition the county judge to take appropriate action. After proper notification by the judge, the owner of the abandoned well must seal the well or pay the county $100 for sealing it.

Arkansas defines pollution as the contamination of state waters (surface or underground) so as to create a nuisance, or render the waters unclean or noxious or impure so as to be actually or potentially detrimental to public health, safety or welfare, to domestic, commercial, industrial, agricultural or recreational use, or to livestock, wildlife or fish. The law is administered by a Water Pollution Control Commission composed of eight members. The commission is authorized to administer and enforce all laws and regulations relating to pollution of all surface and underground waters, to investigate pollution and conduct research, to establish water standards, to prepare a progran for the elimination of pollution, to issue orders requiring the discontinuance of discharge of waste, to approve plans for disposal systems, to conduct hearings, and to issue subpoenas. The commission may enter into agreements with other states for control of pollution of interstate waters subject to the approval of the governor. The commission also acts as the State Water Pollution Agency for the purposes of the Federal Water Pollution Control Act.

It is unlawful to construct a new disposal system or change an existing one until the plans have been submitted to the commission and a permit has been secured. A permit for the continuance of an existing disposal system is required and may be modified or revoked the same as other permits. All orders or rulings of the commission may be appealed to the courts.

Pollution of waters in violation of law or regulations adopted by the commission is a public nuisance and may be enjoined or abated. Such a violation is also a misdemeanor, and each day's continuance of a violation is a separate offense.

Arkansas has another statute which empowers the Fish and Game Commission to investigate industrial pollution harmful to wildlife and fish and to issue orders to control such pollution.

There is a third pollution law which requires the Fish and Game Commission to investigate pollution upon petition of residents of territory adjacent to waters which are being polluted.

Arkansas authorizes corporations, gives them the right of eminent domain, and permits them to draw water from rivers, lakes, and creeks.

No specific Arkansas statutes concerning water conservation were found.

Arkansas' drainage and flood control laws are similar to those of Louisiana.

Arkansas has no interstate compacts or agreements with other states concerning water problems.

Arkansas has been working on a revision of its water policy for some time. The Arkansas Legislative Council has already published two reports relating to the aspects of surface and sub-surface water. In addition to this, the Arkansas Water Resources Development Council, a private organization, has prepared a bill for presentation to the Council. This bill, which applies only to surface water, declares the policy of the State to be:

"The use of water for irrigation, municipal, industrial, and all other beneficial purposes is a matter of public interest and affects the public welfare; the proper use of surface waters will facilitate the conservation of ground waters in many areas; and by encouraging the construction of dams, reservoirs, pumping plants, conduits, and other structures to permit the proper collection, conservation, and use of surface water, the public interest is served. It is therefore declared to be the policy of the General Assembly that control of the use of water for all beneficial purposes shall be in the State."

The bill provides that an individual's right to the use of water depends upon putting it to a beneficial use and applies the prior appropriation doctrine to the right of use. However, actual application of water under reasonable methods of diversion to beneficial use prior to the effective date of the act, if the bill is passed, creates in the person effecting such use a vested right, and the priority of this right shall date from the time of actual application of water to a beneficial use.

The act, if the bill is passed, is to be administered by the Arkansas Public Service Commission whose duties shall include the promulgating, publishing, and enforcing of reasonable rules and regulations, the cooperation with all state and federal agencies, and the holding of hearings. The commission shall have

power to administer oaths, take testimony and depositions, and issue subpoenas.

When found convenient in administering the act, the commission may designate administrative areas. After proper publication and before a set date, those persons claiming vested rights to the use of water must file statements of their claims. These claims shall set forth, in addition to other required information, the source of water supply; the location of the point of diversion; the location and description of the ditch, canal, pumping plant, reservoir, or other works; the purpose of use of the water; the maximum quantity of water diverted or proposed to be diverted for direct use; the maximum quantity of water stored or proposed to be stored annually for use when needed; the location of the land on which the water is used or proposed to be used; the dates of beginning and completing construction of water use facilities and the dates of beginning and of completion construction of enlargements; the date on which the water was first used and the date on which the maximum use of water was first made; the time required for the completion of such construction as may then be under progress; and such other data, including maps, as may be required by the Commission. The commission must keep a record of each claim filed and the date of its filing.

After the effective date of the act, any person not having a vested right to the use of water and who desires to obtain the right to use water must file an application with the commission. The application requires the same type of information as is required of those filing claims of vested rights. A record of the date and hour of the receipt of these applications must be kept by the commission, as the priority of right under such application shall date from the time of its receipt by the Commission.

After receipt of an application the commission shall make an investigation and, within a reasonable time, either approve or reject the application in whole or in part. Before approving or rejecting an application, the commission must provide for a hearing at which anyone already using water from the same source may object to the issuance of a new permit. In the event a permit is issued, it shall contain the same type of information as that required of those filing claims of vested rights. The permit shall also state the time in which the applicant must complete his installations and commence the actual use of water. If the provisions of the permit are properly met, a license shall be issued to the applicant evidencing his right to the use of water. The license shall contain similar information to that contained in the permit.

The determination of the relative rights of claimants to the use of water from the same or several sources will be made if, upon investigation, the commission finds that the facts and conditions justify such a determination. A detailed procedure for arriving at the determination is set forth in the act. After the determination has been made, the commission must file with the county court a certified transcript of its findings, order of determination, and evidence taken at the hearings, together with a petition praying for an adjudication of water rights. All parties concerned have the right to be heard in court. After the court hearing, the judge shall render a judgment, affirming or modifying the order of determination of the commission and adjudicating the relative rights of all parties to the proceeding. The court shall declare, as to each person whose right to the use of water is adjudicated in the judgment, the source of water supply, the location of the point of diversion, the purpose of use, the maximum quantities permitted to be diverted and to be stored annually, and such other matters as may be necessary to identify and describe the right and the exercise thereof in relation to the other rights adjudicated in the decree. Appeals may be taken to the Supreme Court either by the water users or the commission. The final judgment shall be conclusive as to the relative rights

therein adjudicated of all parties to the proceeding and shall not be subject to collateral attack in any other proceeding. After a final judgment is rendered the commission shall issue to each person whose right was adjudicated therein a certificate of adjudication evidencing his adjudicated right. All such certificates shall remain in effect until such time as a court of competent jurisdiction declares that the water has been abandoned.

The commission is authorized to designate water masters who shall be authorized to enforce the provisions of orders of determination and judgments of adjudication. The water masters shall supervise the diversion of all water taken from the source and shall have power to arrest any person violating any of the provisions of the act. Persons arrested by a water master may appeal to the commission.

The act makes water a real right and, as such, permits it to be sold separately or with the land. The right to the use of water shall cease upon the abandonment of that right. Such an abandonment shall be evidenced by an intent to abandon or by a continuous failure for a period of three years to effect a beneficial use of the water.

At the request of a water user the commission may, after proper hearings and after determining that the public interest and outstanding rights will not be adversely affected thereby, authorize the user to change the point or points of diversion of the water, or change the location of works for the transmission or distribution of the water, or change the purpose for which the water is authorized to be used, or change in whole or in part the location of the gross area within which the use of the water may be affected.

The act does not apply to the appropriation of water for domestic use or to the impounding of diffused surface waters.

Sept. 1955 Issue, Journal, American Water Works Association, page 855

A bill was passed by the Arkansas legislature, providing for the creation of a special eleven-man committee to study surface water rights legislation. This new law also grants powers of eminent domain to water rights, but municipal governments may fix the rates. The water utilities are also authorized to transfer any surplus from operating and maintenance funds to bond redemption account, and cities are empowered to borrow (without having the indebtedness count in the constitutional limit), on promissory notes, for the preliminary expenses of expanding existing systems.

Some Current and Proposed Water-Rights Legislation in the Eastern States, by Harold M. Ellis, Symposium Issue, Iowa Law Review, in process

Another appropriation doctrine statute, somewhat similar to the North Carolina and South Carolina proposals, was proposed in the 1955 session of the Arkansas Legislature, but it was withdrawn without being voted on.

While the proposed bill was withdrawn by its sponsor, without being voted on, it seems to have generated some lively debate in the legislature when it was brought up for discussion. Among objections which appear to have been raised were: (1) the State would control the use of water in local areas where such control might not be wanted, and (2) under the prior appropriation doctrine many small farmers might be excluded. The preferential treatment accorded to those who were already making use of stream waters was also objected to, and presumably promoted the deletion of such provisions in the amended draft of the bill.

In lieu of the proposed bill, another bill was enacted in 1955 which declared the State's policy to control the development and use of water for all beneficial purposes and established a commission to study the matter and recommend ways of implementing such water policy, particularly as to natural streams and lake waters.

Previous to this, the case of Harrell v. City of Conway had come before the courts and reached the Arkansas Supreme Court for determination in 1954. The court noted that, in previous cases, it had not had the occasion to make any definite choice between the two opposing riparian theories of natural flow and reasonable use. The court refrained from making such a choice in the Harrell case, as this was unnecessary in its determination. So this important question is still unanswered. The court stated that, under the natural flow theory, "a riparian owner may withdraw water for domestic uses but not for such artificial use as the irrigation of crops or the operation of a factory". It would appear, therefore, that rights to use natural watercourses for irrigation and other so-called "artificial" purposes is open to some question in the State.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

The Research Department, Arkansas Legislative Council, published in January and February, 1954, research memoranda covering aspects of legal control of subsurface water, aspects of legal control of surface water, Arkansas' water situation, and Arkansas' ground water resources.

State Water Legislation, 1955, The Council of State Governments, December 1955, BX-299

Act 255 (SB 366) authorizes the Governor to appoint five persons as members of the Arkansas Water Compact Commission. The Commission is authorized to negotiate compacts with officials in adjoining states concerning the use of interstate waters. It may enter into compacts subject to their ratification by the General Assembly.

Act 414 (SB 424) permits two or more municipalities to join together in the acquisition or construction of a water works system. The municipalities may jointly issue bonds to finance such projects, and such bonds are to be secured by the total revenues of the water works system.

Act 66 (HB 70) authorizes drainage districts to take necessary steps to secure federal assistance in the construction of dams and reservoirs.

CALIFORNIA

Report and Recommendations, 1943, of Committee of the National Water Reclamation Association

The following constitutional amendment was adopted November 6, 1928:

"It is hereby declared that because of the conditions prevailing in this state the general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such

water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or unreasonable method of diversion of water. Riparian rights in a stream or water course attach to, but to no more than, so much of the flow thereof as may be required or used consistently with this section, for the purposes for which such lands are, or may be made, adaptable, in view of such reasonable and beneficial use; PROVIDED, HOWEVER, that nothing herein contained shall be construed as depriving any riparian owner of the reasonable use of the water of the stream to which his land is riparian under reasonable methods of diversion and use, or of depriving any appropriator of water to which he is lawfully entitled. This section shall be self-executing, and the Legislature may also enact laws in the furtherance of the policy in this section contained."

The Civil Code Provides that:

"All water or the use of water within the state of California is the property of the people of the State of California, but the right to the use of running water flowing in a river or stream or down a canyon or ravine may be acquired by appropriation in the manner provided by law; . . . "

Rules, Regulations and Information pertaining to Appropriation of Water in California, California Administrative Code, 1952

The duties, powers, and jurisdiction vested in the Department of Public Works by Division 2 of the Water Code relating to water are administered and exercised through the State Engineer, who is the Chief of the Division of Water Resources.

Since December 19, 1914, the appropriation of water in California has been governed by the Water Commission Act (Statutes 1913, Chapter 586). The provisions of this act, as amended, were codified in 1943 and are now (1952) contained in the Water Code (Statutes 1943, Chapter 368, as amended).

The Water Code and the Rules and Regulations of the Department of Public Works adopted pursuant thereto prescribe a definite procedure in connection with the initiation and consummation of rights to appropriate water. Detailed information is contained in the rules and regulations, pages 5 through 27, and under the heading "General Information, Pertaining to Applications to Appropriate Water", pages 29 through 31.

Compilation and Summary of Pollution Control Legislation enacted by the California Legislature, 1949 Regular Session

The existing permit law, which in theory requires that all disposals of sewage and industrial waste be controlled under permit issued by the State Department of Public Health, is repealed on December 15, 1949 (Chapter 1550).

Control of the economic efforts of sewage and industrial waste is established by the Dickey Water Pollution Act (Chapter 1549). Pollution and nuisance are subject to control by Regional Water Pollution Control Boards which are created for the nine major drainage regions of the State. The regional boards are composed of five appointees representative of the major interests involved. They have the duty to coordinate the action of the numerous governmental agencies involved and to promote cooperative action with waste producing industries. The boards are empowered to make and enforce rulings as to conditions to be maintained in all instances of pollution and nuisance, existing or threatened, within their region, but the boards may not specify the manner or means of maintaining the required conditions. Communities within a region are not prevented

from adopting and enforcing additional regulations which may be deemed necessary. Upon failure of anyone to comply with an order of a regional board an action for injunctive relief must be brought by the district attorney, or, if he should fail to act, by the Attorney General.

A State Water Pollution Control Board is created, consisting of the State Engineer, the Directors of the Departments of Public Health, Agriculture, and Natural Resources, and nine appointees representative of the regions of the State and of the various interests in these problems. The state board has the duty to undertake statewide planning for pollution control, acting in an advisory capacity to the regional boards. It will direct research programs in the technical phases of pollution control, and will administer the State Water Pollution Control Fund. The state board may act as an appeal board in any specific instance of pollution where it is found that a regional board has not taken proper action.

An executive officer and staff is provided for each of the boards. Funds for administrative expenses are appropriated to the state board for allocation to the regional boards (Chapter 1554). The state and regional boards may obtain assistance from any state or local agency, and the state agencies most concerned with pollution problems - The Department of Public Health, the Division of Fish and Game, and the Division of Water Resources - are specifically directed to cooperate with and assist the control boards (Chapters 1549, 1550, 1552, and 1553).

Financial assistance to communities for sewerage projects is provided by means of loans from a State Water Pollution Control Fund (Chapter 1551). This fund will be administered by the State Water Pollution Control Board. All or any portion of funds needed for a sewerage project may be loaned, with payments deferred as long as may be considered necessary, upon security of bonds of the community. Before state funds are loaned, it must be shown that the project is feasible and cannot be financed through private sources. Cities and districts are allowed to issue "second mortgage" revenue bonds to secure such loans, or to secure similar loans which may be available from the Federal Government or from any other source (Chapter 1555). Communities can enter into long term contracts with industry for waste disposal (Chapter 1555), and an appeal procedure for review of sewer rental charges is established (Chapter 865). Funds necessary for sewerage facilities are excluded from tax limitation in cities of the sixth class (Chapter 1253).

The Division of Water Resources is directed to conduct a continuing survey of water quality in the State with regard to pollution from all sources (Chapter 1552). The division is directed to study all facts relating to the feasibility of reclamation of waste-water for industrial or agricultural purposes. Water-well drilling practices, as they relate to pollution of underground waters, will be investigated, and the division will recommend minimum standards for proper well construction and sealing of abandoned wells in particular areas. Reports and recommendations relating to these matters are to be made by the division to the Legislature and to the appropriate Regional Water Pollution Control Board. Every person who hereafter constructs or alters any water-well must file a detailed report with the appropriate regional board. Failure to do so, or falsification of such record, is a misdemeanor. Violation by any licensed well driller or any provision of the Health and Safety Code or Water Code relating to water well drilling is made grounds for disciplinary action by the State Contractors' License Board (Chapter 1433). The University of California is allocated $50,000 for research in technical problems of disposal of sewage, garbage, and industrial waste (Chapter 1575).

Sept. 1955 Issue, Journal, American Water Works Association, pages 856-857

In California, more than 600 bills presented to the 1955 Legislature had to do with water. Many of these were introduced by various senators just to attract attention to themselves.

Probably the most important proposed legislation was the so-called Feather River Project, in which water would be taken from the areas of surplus water in the northern part of the state and delivered to the southern part over a distance of about 500 miles. This procedure has been balked by the fact that the counties of origin insist on grarantees that permitting water to be transported for use elsewhere will not preclude later appropriations for local development. The southern section feels that the northern area should be guaranteed for reasonable development in the future. In return, the northern part of California is quite willing to furnish surplus water rather than waste it to the ocean. Bills to permit this scheme have not been passed. The lower house appropriated funds to purchase the sites for the St. Louis and Orvalles reservoirs which are necessary to the Feather River Project. This bill, however, was rejected by the upper house.

An important law that was enacted to help save the resources of ground water basins permits a pumper to take water from a source nontributary to the basin without losing his rights to ground water.

A recent law requires a person in the southern counties of the state, extracting water from an overdrawn basin, to reveal his pumpage to state authorities. Upon verification, such recordation then becomes prima facie evidence in any future adjudication.

Another law provides for the formation of replenishment districts (see the paper prepared by Krieger on p. 909 of this issue). This is the most far-reaching water legislation in the state's history. (Note: James H. Krieger, Attorney, Best, Best, and Krieger, Riverside, California, states that a water replenishment district will have many of the powers of most public corporations; that its principal function will be to replenish the ground-water supplies of the area within the boundaries of the district; that it may raise funds by selling water, placing an ad valorem tax on a special assessment on those who extract ground water; and that replenishment water may be purchased from a nontributary distributor, such as the Metropolitan Water District, and be spread into the underground basin or sold to persons agreeing to discontinue pumping in exchange for water.)

A bill, proposed by fishermen, was passed requiring water works to permit commercial fishers to utilize reservoirs. This law, distasteful, of course, to the utilities, was vetoed by the Governor.

(Note: The information regarding Nevada, Washington, and California, contained on pages 856-857, Sept. 1955 Issue, Journal, American Water Works Association, was taken from a paper presented at the Annual Conferences of the Association in Chicago on June 13, 1955 by L. J. Alexander, Chief Engr., Southern California Water Co., Los Angeles, Calif.)

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

Bulletin No. 1, Publication of State Water Resources Board, 1951, reports the findings of an investigation of the water resources of California by the State Water Resources Board as directed by the Legislature, discusses the general

water resources situation in California, describes the methods and procedures used for the study, outlines and describes in detail the drainage basins of California by major hydrographic areas, and discusses, for each hydrographic area, precipitation and run off, flood flows, and frequency and quality of both surface and ground waters.

The final report of the Assembly Interim Committee on Conservation, Planning and Public Works, April 1953, recommends that separate branches of natural resource administration, including Department of Water Resources, be departmentalized. It also recommends a State Board of Natural Resources to give coordination of planning and administration between departments and to administer research and education programs.

"Proposed State Organization for Administration of Laws and Policies Pertaining to Water in California", prepared by Legislative Auditor and dated January 8, 1954, recommends that functions now being performed by various water agencies be consolidated in a single operating agency, a Department of Water Resources organized along functional lines with diversions for Administration, Water Resources and Quality, Water Rights, Project Planning, and Project Maintenance and Operation, the last division to have sections on irrigation and flood control, and, later, power, if needed. The numerous boards now in existence would be replaced by a single State Water Resources Board, largely advisory, with only a few specific operating functions, such as issuance of revenue bonds.

The Department of Water Resources would establish seven regional offices with regions conforming to the seven major hydrographic divisions of the State. Each of the seven offices would have the assistance of a Regional Water Resources Board of five appointed members and two ex officio, the chief of the regional office and the member of the State Board from that region. The Regional Boards would be strictly advisory but would interpret state policy to the local communities and receive suggestions and advice from local water users.

"Analysis of Proposals for Reorganization of California Water Resources Agencies", Senate Interim Committee on Governmental Organization, 1954, concludes that practically all of the recent proposals for reorganization call for a Department of Water Resources with a Director appointed by the Governor; that coordination of agencies, but not functions, would create a figurehead director without administrative responsibility; and that agencies concerned with principal water resource functions of planning and construction of projects can be consolidated without necessarily including these related functions of watershed management, negotiation of interstate compacts, and water pollution, which, however, do require coordination.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

Chapter 1886, Statutes of California, 1955 (Senate Bill No. 1874), declares that it is the intention of the legislature for the State to pay the costs of lands, easements and rights of way for projects undertaken by local organizations pursuant to Public Law 566; . . .

Chapter 1680, Statutes of California, 1955 (Senate Bill No. 182) provides for the formation of improvement districts in soil conservation districts to cooperate with the United States in carrying out works of improvement under Public Law 566; . . .

State Water Legislation, 1955, The Council of State Governments, BX-299, December 1955

Chapter 1810 (SB 935) creates a commission of the State Engineer and six other members appointed by the Governor from specified localities. The commission is to cooperate with a similar commission of Nevada and a representative of the United States in formulating and submitting to legislatures of both states a compact concerning distribution and use of waters from several interstate streams. Appropriation $50,000.

Chapter 1015 (SB 935) requires the State Engineer to consider the relative benefit to be derived from all uses of water in acting upon applications for appropriation.

COLORADO

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

The constitution of Colorada provides:

"The water of every natural stream, not heretofore appropriated, within the state of Colorado, is hereby declared to be the property of the public, and the same is dedicated to the use of the people of the state, subject to appropriation as hereinafter provided."

"The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied. Priority of appropriation shall give the better right as between those using the water for the same purpose; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes shall have the preference over those claiming for any other purpose, and those using the water for agricultural purposes shall have preference over those using the same for manufacturing purposes."

Sept. 1955 Issue, Journal, American Water Works Association, page 855

In discussing Colorado's water problems in a message to the state legislature, Governor Johnson said:

The unfortunate controversy between the eastern and western slopes must be resolved constructively. Colorado should see a solution which would benefit both slopes and injure neither. It can be done. It must be done. Colorado's ground water resources need to be explored to the fullest extent by competent technicians, and these precious resources need to be protected by law with respect to private and public equities and against abuse and waste. The Colorado Water Conservation Board must get on top of this problem with firm and aggressive determination at once, and give the General Assembly its views as to whatever legislation is required to protect the public interest. An extensive and cooperative groundwater exploration with the U. S. Geological Survey should proceed unhampered by lack of necessary state funds.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

"colorado's Water Resources", Colorado Water Conservation Board, June 1954, discusses the basic physical situation as to surface and underground water supply, mentions need for survey of underground water, outlines Colorado's

water law and describes the Water Conservation Board, presents activities of federal departments in Colorado with descriptions of all major projects completed and being studied, lists state financed investigations, and outlines the Plan of Water Development for Colorado, and the river basin programs and interstate water compacts participated in by Colorado.

A report of the Subcommittee on Water Problems, Colorado Legislative Council, February 1955, reviews the purpose and functions of the state's two major water agencies, the Office of State Engineer and the State Water Conservation Board, considers the adequacy of state financial support, examines federal agencies which participate in water matters in Colorado, outlines the legal aspects of water rights, and makes the following recommendations:

Administrative functions (specifically, regulation of well diggers) should be transferred from the Water Conservation Board (a policy-making agency) to the office of State Engineer (an administrative agency).

Need increased appropriations for water agencies, expecially for personnel.

Should enact an underground water code and provide appropriations to permit participation in U. S. Geological Survey studies of underground water.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

House Bill No. 349, Fortieth Colorado General Assembly, 1955, provides that the State Soil Conservation Board shall have the additional authority to undertake studies of watershed planning and development of projects for watershed flood prevention and underground water storage, and to administer, direct and operate such projects, as well as projects for flood prevention and conservation and erosion control; . . .

State Water Legislation, 1955, The Council of State Governments, BX 299, December 1955

Senate Joint Resolution establishes a joint interim committee as a subcommittee of the Legislative Council to study the water resources of the state, their use, and legislation governing water, the ground water law, the transportation of water, and other problems connected with the use and conservation of water in the State. The committee is to report to the 1956 and 1957 sessions of the legislature. It is a continuation of a committee established by the 1954 session.

House Bill 34 establishes standards governing some types of pollution and provides that the Department of Public Health may investigate cases of improper discharge of sewage . . .

Senate Bill 100 authorizes the organization of metropolitan water districts by any two or more municipalities. . . .

CONNECTICUT

State Flood Control and Water Policy Commission, Chapter 166, General Statutes

The governor is authorized to appoint a bipartisan commission composed of the director of the state water commission and such four other persons as

the governor may deem advisable. Said commission shall be known as the State Flood Control and Water Policy Commission.

Said commission shall make a comprehensive study of all conditions, wherever located, in any way related to: (a) the control of flood waters, the removal of stream obstructions caused by flood waters, the extent of damage caused by flood waters to property of the State, its political subdivisions, industry, and agriculture, and any necessary means or method by which such damage may be repaired or provided against in case of future floods; (b) river and harbor improvements, obstructions or encroachments in any of the navigable waters or tributaries within the state; and (c) any matters kindred thereto.

The governor may, at any time, require the commission to secure the necessary information and submit a special report upon the above matters, and if the governor shall find, upon an examination of such report, that the interests of the state require, or that there exists a serious menace to the lives or property of the people of the state, he may order the commission to take such action as he may determine to be necessary to protect the interests of the state or the lives or property of its citizens. In such case, the governor may make available, out of the civil list funds of the state not otherwise appropriated, a sufficient sum or sums required to protect such interests.

The state water commission is designated as the administrative agency to cooperate with and assist the flood control and water policy commission in effectually carrying out the purposes expressed in this chapter.

State Water Commission, Chapter 195, General Statutes

The state water commission shall continue to consist of three members. On or before the first day of May 1949, and biennially thereafter, the governor, with the advice and consent of the senate, shall appoint one commissioner, who shall hold office for six years from the first day of June following his appointment and until his successor shall be appointed and shall have qualified.

Any person, firm or corporation, causing or alleged to be causing the pollution of any water, may be cited to appear before said commission to show cause, if any shall exist, why said commission shall not issue an order regulating such pollution.

If, upon hearing, the commission shall find that any person, firm or corporation is polluting the waters of the state, it may make an order directing such person, firm or corporation to use or to operate some system or means which will reduce, control or eliminate such pollution, having regard for the rights and interests of all persons concerned, provided the cost of installation, maintenance, and operation thereof shall not be unreasonable or inequitable.

Any person, firm or corporation, aggrieved by any order of said commissio may appeal from such order to the supperior court.

No person, firm or corporation shall create, establish, cause or maintain any source of pollution not existing June 23, 1925, unless such person, firm or corporation, after application to said commission, has obtained from the commission a permit authorizing such pollution.

No person, or municipal or private corporation, shall deposit any garbage, domestic refuse, or other material of like nature in the waters of any

river, stream, lake or tidal waters of this state.

No person, corporation or municipality shall place in, or permit to be placed in, or discharge or permit to flow into, any of the waters of the state, any sewage prejudicial to public health.

Board of Supervision of Dams, Chapter 240, General Statutes

There shall continue to be a state board for the supervision of dams, dikes, reservoirs, and other similar structures.

The board shall consist of the director of the state water commission, who shall be the chairman of the board, and five appointed members, legal residents of this state for at least five years, licensed to practice professional engineering in this state, and especially qualified for their duties by education, training, and experience.

The board shall investigate and inspect or cause to be investigated and inspected, all dams or other structures which, in its judgment, would, by breaking away, cause loss of life or property damage. If the board finds any such structure to be in an unsafe condition, it shall order the person, firm, or corporation owning or having control thereof to place it in a safe condition or to remove it, and shall fix the time within which such order shall be carried out.

Before any person, firm or corporation shall construct, alter, add to. or remove any such structure, in a locality where life or property may be endangered through the insufficiency thereof, such person, firm or corporation shall apply to the board and obtain a permit for undertaking such work.

When an existing structure is found by the board to be safe, or has been made safe pursuant to an order of the board, or a new structure has been constructed to the satisfaction of the board under a properly issued permit, the board shall issue to the owner a certificate, approving the structure, but subject to such terms and conditions, if any, as the board may deem necessary for the protection of life and property.

Upon written request, any person, firm, or corporation, aggrieved by any decision of a member of the board, shall be given a hearing by a board, An appeal may be taken from any decision of the board to the superior court of the county wherein such structure is located.

Connecticut Port Commission, Senate Bill No. 694, 1955 Session, General Assembly

There is hereby created "The Connecticut Port Commission", which shall be a body corporate and politic having the powers, duties and jurisdiction hereinafter enumerated and will be a division of the State Flood Control and Water Policy Commission.

The Governor shall appoint five commissioners to serve respectively for one, two, three, four, and five-year terms. In addition, annually, the Governor shall appoint one of the Commissioners of the State Flood Control and Water Policy Commission to the Connecticut Port Commission for a one-year term.

The Commission shall have (in addition to others) the following powers:

To make studies and investigations and compile data concerning present

and potential commercial, recreational, and other uses of the natural waterways of the State;

To prepare plans for such projects and facilities as may be necessary to permit and encourage greater utilization of such waterways;

To recommend desirable projects and facilities to public, semi-public, and private agencies;

To undertake the development of such improvements and facilities and to otherwise promote increased use of waterways in the public interest;

To advance money to the United States or any department or agency thereof in accordance with federal statutes when necessary to secure federal cooperation in projects related to the activities of the commission and beneficial to the state;

To negotiate, cooperate, and enter into agreement with the United States in order to satisfy the conditions imposed by the United States in authorizing any project for the improvement of navigation of any harbor or river;

To acquire, own, lease, operate, and dispose of personal and real property and of any interest therein;

To acquire, by right of eminent domain, lands, buildings, and other structures, any interest or estate in lands and air rights over the land, and take the same after paying just compensation to the owner thereof;

To lay out, construct, reconstruct, alter, maintain, repair, control, and operate facilities for the improvement and development of interstate, intrastate, and foreign commerce; and

To drain and fill tidal flats and lowlands and to otherwise improve the navigation and use of any waterway for commercial, recreational or other purposes.

The commission shall carry on a continuing investigation of port conditions and the state of commerce, and shall recommend, from time to time, comprehensive plans for the improvement and development of port facilities and of related transportation and service facilities and accommodations.

When so directed by the commission and with the approval of the governor and the finance advisory committee, the state treasurer is authorized to issue bonds of the state to an amount not exceeding three million dollars in any one biennium.

The commission shall have the power to provide for the collection of rents, wharfage, and other revenues and to fix from time to time the amount thereof, and the revenues therefrom shall be deposited with the state treasurer in a separate fund.

Sept. 1955 Issue, Journal, American Water Works Association

Connecticut is apparently concerned with three items that are to be studied after the establishment of a Water Resources Commission:

1. A sharp increase in the use of irrigation waters by Connecticut
2. Competition between cities for water supplies
3. Removal of ground water at an alarming rate through gravel-packed wel

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

Public Act. No. 3, Public Acts of Connecticut, June Special Session, 1955 (House Bill No. 66), provides that any city, town or borough may cooperate with the United States to carry out, maintain and operate agricultural phases of (1) structural and land-treatment measures for flood prevention and (2) the conservation, development, utilization, and disposal of water.

Public Act No. 509, Public Acts of Connecticut, 1955 (Substitute for House Bill No. 304), provides for the creation of special-purpose districts having the power, among others, to plan, construct, and maintain a flood or erosion control system; provides that each district shall be governed by a flood and erosion control board, and that any municipality may exercise, through a flood and erosion control board, the powers granted to such districts; and prescribes the powers and duties of a flood and erosion control board, including the power to defray the cost of constructing any flood or erosion control system by issuing bonds or other evidences of debt, or from general taxation, special assessment, or any combination thereof.

State Water Legislation, 1955, The Council of State Governments, EX-299, December 1955

Special Act 572 (SB 284) establishes a temporary commission to be knosn as the Water Resources Commission . . . It is to study water resources and to present water laws and the relative water needs of various groups. $5,000 is appropriated to carry out the provisions of the act, and a report is to be submitted before January 1, 1957.

Public Act 174 provides that all persons, firms, or corporations engaged in the business of drilling or constructing wells shall annually register with the State Water Commission.

DELAWARE

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Delaware follows the riparian doctrine in connection with water use but has no written law on the subject.

The basic pollution law of Delaware is supervised by the Water Pollution Commission and is administered by the State Board of Health. The law relates to underground waters as well as surface waters and is similar in most respects to pollution control laws of other states. One unusual aspect of the Delaware law is its provision concerning methods for review of the commission's orders. One method for review is to appeal to the courts. The other method, which is the unusual one, is to proceed by arbitration. The person affected may elect to submit the matter to three reputable sanitary engineers, one chosen by the person affected, one by the commission, and the third by the other two. A decision by all three of the arbitrators is final.

No Delaware statutory law was found in connection with irrigation.

Delaware provides for agricultural and soil conservation, and drainage and reclamation of lowlands. To accomplish these purposes the law provides for soil conservation districts and "tax ditches". Tax ditches are similar to drainage districts in Louisiana and are for the purpose of draining low or overflowed lands.

Drainage and flood control in Delaware are provided for in the same statutes as is conservation.

Delaware, New Jersey, New York, and Pennsylvania are members of the Delaware River Basin Water Commission Compact. The compact is concerned with an integrated program for the development, utilization, control, and conservation of the waters of the Delaware River Basin. An interstate commission has been created and is vested with numerous powers including the authority to determine the location of, and formulate plans for, the construction of dams, reservoirs, and other structures, and to allocate to each of the states an equitable apportionment of water to meet domestic and industrial requirements.

The states of Delaware, New Jersey, New York, and Pennsylvania are members of a reciprocal agreement concerning control of pollution in the waters of the Delaware River Basin. The agreement includes zoning of waters based on the uses of particular sections of the waters and provides standards for control of pollution within the zones.

According to information received from the Director of the Division of sanitary engineering of the Delaware State Board of Health, there has been no survey of water use in Delaware nor is there an existing water policy. There is, however, considerable interest in the problem of water conservation, and various groups are working toward the passage of legislation concerning the problem. Several groups are presently making surveys of a local nature, but the results of these surveys are not yet available.

Sept. 1955 Issue, Journal, American Water Works Association

On April 1, 1955, the Delaware Water Resources Study Committee submitted a very comprehensive report on the water supplies of the state. This, one of the most complete documents on the statewide study that has been produced, should serve as a very potent guide for future water developments in the state.

Reports on Water Resources, The Council of State Governments, BX-298 October 1955

A preliminary report by the Delaware Water Resources Study Committee, April 1955, begins with a review and summary of the historical and current knowledge of the state's water resources, including surface and ground water utilization. The existing problems of shortages, salt water encroachment, pollution, drainage, soil erosion, quality, cost, and conservation are considered. A discussion of the basic principles and history of water rights doctrine is included, considering riparian and appropriation rights, and the conflict between them, and rights to water in the ground. Present state water rights laws and federal water rights laws affecting the state are summarized.

A planned, systematic program to locate and assess ground water resources should be initiated.

Existing stream gaging stations should be continued and new ones established as needed.

In conjunction with the surface and ground water studies, the chemical and physical composition of water from various sources should be analyzed.

The greatest possible reuse of waters should be insured by expanding the pollution abatement program.

Watershed programs should be evaluated.

A comprehensive study should be made of Delaware water rights legislation by an appropriate committee and recommendations submitted to the next General Assembly.

A coordinated educational and informational program should be developed.

In order to develop a continuing program of collecting, analyzing and interpreting basic data and to develop a flexible plan and program of water development and use in accordance with economic need, the present Water Resources Committee should be continued or a similar one should be established and given the duties indicated.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

Chapter 276, Laws of Delaware, 1955 (Senate Bill No. 351), amends the drainage law to provide (a) that drainage is defined as water management, by drainage areas or watersheds, to safely remove or control both excess surface floodwaters and damaging, excess subsurface waters, and (b) that drainage organizations may be established for the drainage of lands or the protection of lands from flooding.

FLORIDA

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

The riparian doctrine is still in use in Florida although there is more modern legislation relating to some aspects of Florida's water resources.

An artesion well is defined in Florida as an artificial hole in the ground which penetrates any water-bearing rock and from which water flows naturally to the surface or rises above the top of the water-bearing bed. Artesian wells are also holes drilled as a water source which penetrate water-bearing beds that are a part of the artesian water system of the state, as determined by representatives of the Florida Geological Survey.

The law makes it unlawful tp permit waste from artesian wells, waste being defined as permitting water from an artesian well to run for purposes other than beneficial ones, such as irrigation, industrial purposes, domestic use, or the propagation of fish. Water for irrigation must be restricted to a minimum by the use of proper structural devices in the irrigation system which must be adjusted so that only such water as is needed for ordinary use will flow. The law authorizes certain agencies and officials to order installation of a valve or correction of flow, and if the owner does not comply with law, the official or agency may correct the defect at the expense of the owner and file a lien upon the land. The law does not apply to wells feeding a lake, existing prior to June 15, 1953 and used for public bathing or propagation of fish, when the well is needed to maintain purity for bathing and a proper water level for fish.

There is no general pollution law in Florida, but there are several that relate to the problem.

A permit from the Board of Health is required to drill or use a well for the purpose of drainage of surface water or sewerage if the well is located within five miles of a city or town. If such a well is already in use for such a purpose, the board may order the discontinuance of such use if it is deemed necessary. The law also prohibits the deposition of deleterious substances into surface water.

It is unlawful to discharge any substance into surface waters that would injure fish.

Florida requires that mines must have a place for depositing waste so that it will not escape into surface waters. This does not apply, however, to the escape of discolored water due to excessive rains or floods.

Florida has had to cope with a rather unique ground water pollution problem. About the beginning of the century, it becase common practice to drill drainage wells into the porous limestone aquifers for the disposal of storm water. As urban centers and industries developed, drainage wells were used to dispose of sewerage and industrial wastes. This resulted in serious pollution problems and water-borne epidemics. Florida's Sanitary Code now prohibits the drilling of drainage wells for these purposes and regulates their use for other purposes.

Florida has a Board of Conservation which is directed to appoint an engineer of the whole state for the purpose of planning a system of water conservation and flood control. The progress of the surveys must be fully described and reported to the governor annually. The board has the authority to make rules to prevent action in one watershed or area which will adversely affect the surface or underground water supply in another watershed or area. The board also has the duty to represent the state when the state is financially involved in water control in a district or county. Another function is to publicize ground and surface water conditions to the general public and to recommend appropriate legislative action.

Florida also has a soil conservation statute which is closely related to its water conservation statute. It is interesting to note the part of the law which states the consequences of soil erosion. The consequences stated include loss of soil and water which causes destruction of food and cover for wildlife, a diminishing of the underground water reserve, an increase in the speed and volume of rainfall runoff, and losses to navigation, hydroelectric power, municipal water supply, irrigation development, farming, and grazing.

Florida has no specific statutes dealing with irrigation. There are, however, numerous provisions for irrigation included in statutes dealing primarily with drainage and flood control.

Florida provides for drainage and flood control in substantially the same manner as does Louisiana. (See "Louisiana" herein.)

An outstanding example of improper planning and execution of a drainage and flood control program occurred in Florida. After the 1928 hurricane which killed 2400 people in Florida and did property damage in the amount of two million dollars, an extensive drainage and flood control program was started. Messrs. Hubert Marshall and Robert Young, in a 1953 report (Public Administration of Florida's Natural Resources, by Messrs Hubert Marshall and Robert J. Yount), summarized the situation as follows:

"In this work the U. S. Army Engineers, the Everglades Drainage District,

the Okeechobee Flood Control District, and a large number of subdrainage districts created by special acts of the legislature, played the leading roles. Federal expenditures were justified largely by anticipated flood control and navigation benefits; state and local expenditures were made largely for the land-use benefits to be derived from drainage. The projects were undertaken without a clear conception of the fundamental problems of drainage and flood control, and especially of the need to store surplus water for the dry months of the winter season. They were largely uncoordinated and improperly financed, and in almost every case, the design of the engineering structures was handicapped by the absence of adequate basic data on the hydrology of the region."

This program collapsed in 1931 because of the depression. The problem again came to a head in 1948 after a hurricane that did property damage in the amount of 60 million dollars. The report referred to above states that this "focused attention on the absolute necessity of collecting basic data and formulating a plan to encourage the sound development of the region, giving due consideration to the needs and interests of all affected groups".

The plan that evolved is an "integrated, comprehensive plan to provide a network of major facilities for flood control, drainage, irrigation, and protection of domestic water supplies and the abundant wildlife resources of that part of the state". The plan will cost between two hundred and three hundred million dollars with about 60% of the cost being financed by the federal government, 15% by the state government, and 25% by taxation of the landowners in the district.

The report then summarizes the new program as follows:

"The salient feature of the new program is the construction of multi-purpose facilities as part of a comprehensive water control plan. The emphasis of earlier plans was on flood control and drainage, using Okeechobee as a natural reservoir and storage basin with canals connecting the lake with the ocean and gulf to dispose of surplus water. This approach to the problem did not furnish the needed flexibility, since most of the facilities were single-purpose structures. The capacity of the canals was inadequate to prevent floods-yet as more and more water was drained from the land, the water table fell and supplies for irrigation in dry periods were increasingly inadequate. To meet the problem of excessive high and low water stages, the new plan will enlarge and strengthen existing facilities, except that less water will be drained into the ocean and gulf. The water table will be maintained and large quantities of water will be stored for irrigation through the creation of three huge water conservation reservoirs into which surplus water can be fed, later to be released for irrigation as the need arises."

Messrs. Marshall and Young then outline the factors upon which the success or failure of the program is dependent as follows:

"The success of the program is dependent upon the cooperation of many inter-related agencies, jurisdictions, and landowning groups. The District is seeking the assistance of these groups through the organization of County Advisory Committees, and through meetings with County Commissioners, sub-drainage district officials, and landowners . . . The District is particularly anxious to secure the cooperation of County Commissioners so that county roads and District levees can be tied together into a coordinated and mutually beneficial system. The elevation of much of the area is so low that ditches are invariably dug to secure materials for county roads; and concomitantly, there is no reason why the levees of the District should not be used for roads.

Cooperation in the location of roads, ditches, and levees is, therefore, mutually advantageous. The District is also seeking to have each sub-drainage district assume responsibility for a vigorous program of hyacinth control. With the use of maps, movies and photographs, lectures, and displays, an active program of education is being carried on to disseminate information and secure support for the plan. This program is important since the District is supported by an ad valorem tax on real property. Through the medium of advisory committees and other groups, the special problems of the various areas are being brought to the attention of the District so that modifications of the original plan can be considered and satisfactory adjustments made."

This experience in Florida should illustrate the necessity for proper planning and engineering and the benefits derived from a water policy broad enough to encompass more than one problem at a time. It should also illustrate the necessity of educating the people that will be affected by the program.

Florida has no interstate compacts concerning water problems.

At the present time, Florida contemplates no major changes in its water laws.

Chapter 29748, Senate Bill No. 377, Approved by the Governor May 30, 1955

The enactment of this bill declares policy of the state of Florida as follows:

"(a) Waters in the state are a natural resource.

(b) The ownership, control of development, and use of waters for all beneficial purposes is within the jurisdiction of the state which in the exercise of its powers may establish measures to effectuate the proper and comprehensive utilization and protection of the waters.

(c) The changing wants and constantly increasing needs of the people of the state may require the water resources of the state to be put to beneficial uses to the extent of which they are most reasonably capable and therefore the waste and unreasonable use of water should be prevented and the conservation of water should be accomplished.

(d) The public welfare and interest of the people of the state require the proper development, wise use, conservation, and protection of water resources together with the protection of land resources affected thereby.

(e) The state should make a careful and comprehensive study before enacting any legislation affecting the matters heretofore stated in this Act."

The act created a water resources study commission composed of two members of the Senate to be appointed by the president thereof, two members of the House of Representatives to be appointed by the Speaker thereof, and three members to be appointed by the governor from the state at large, and directed the governor to designate one of the members of the commission as chairman.

The act directed the commission to determine whether or not there is need for a comprehensive water law in the state administered by a board and, if so, the extent of the jurisdiction of the board, the details of the operation thereof, the expense of operating the board as compared to the savings anticipated to be effected and the effect on the various interests involved.

The commission, in cooperation with the state geologist, is charged with the responsibility of studying data from other existing state agencies and

additional data which may appear necessary and informative from other sources as shall be available to the commission.

All other state agencies are directed to cooperate by providing any available information requested by the commission.

The act stated that public hearings should be held throughout the state, and that rrepresentatives of interests affected, including industrial, agricultural, municipal, and recreational interests should be consulted by the commission.

The act provided that the study shall be completed and the commission shall report its findings and recommendations to the Legislature not later than 60 days before the convening of the regular legislative session of the year 1957, and that, on June 30, 1957, the duties, responsibilities, and authority of the commission shall terminate and the commission shall cease to exist.

Sept. 1955 Issue, Journal, American Water Works Association

According to Frank E. Maloney ("Laws of Florida Governing Water Use, Jour. AWWA, 47:440, May 1955), the present status of water laws is extremely uncertain. Older case law adopts the English common law of riparian rights on surface streams and allows complete freedom of withdrawal to owners of land overlying ground water supplies. More recent case law seems to modify these rules by engrafting the principle of reasonable use as a limitation on the landowner's absolute rights.

Although the situation is not yet generally critical, the legislature is expected to appoint a study commission to report in 1957.

Reports on Water Resources, The Council of State Governments, October 1955, EX-298

A report of the Central and Southern Florida Flood Control District, November 1954, regarding five years of progress, 1949-1954, gives a descriptive account of the whole cooperative federal-state-local Central and Southern Florida Flood Control Project, including prevention of flood damage, conservation of fresh water, increased land use, prevention of salt water intrusion, navigation, and improvement of fish and wildlife resources, and contains historical background of the development of the program, a description of the present district, and a summary of work accomplished and of future plans.

"The Water Resources of Florida", Board of Control for State Institutions, 1955, discusses the water supply in Florida in terms of rainfall, topography, geology, hydrology, run-off, evaporation, recharge, and ground water resources. Water quality is considered in terms of sources of pollution such as domestic sewage, industrial waste, and salt water levels, drought and flood control, water usage, and legal aspects of water use. The need for a study of existing water law is suggested. Present doctrine is based on English common law granting practically unrestricted rights to riparian and overlying ground owners. Recently, this has been modified by the principle of reasonable use. An appendix lists agencies involved in water resources development and contains a list of problems in which research is needed.

The report of the Citizens Water Problem Study Committee to the Governor March 1, 1955, was the result of study focused on the question of the need for a water law in Florida, and summarizes the testimony of witnesses at a public meeting held by the committee . . . The amount of water supplied to Florida

from all sources appears to be sufficient for all needs for the foreseeable future if it is properly managed. Proper management of our water resources requires a comprehensive law administered by a board. But adequate knowledge of water resources and the effect of water management is needed. Present law is inadequate.

The report contains recommendations as follows. A planning organization - a water resources study commission - to study available data and accumulate additional data as needed to recommend water resources legislation should be established. The Legislature, in creating the Commission, should include a general statement of water policy.

State Water Legislation, 1955, The Council of State Governments, BX-299, December 1955

Chapter 29837 (SE 328) authorizes counties and their boards to construct, maintain, and operate water supply systems and sewage disposal systems to be financed by special assessments and bonds.

GEORGIA

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Georgia adheres to the riparian doctrine for determining rights to the use of water. The law of Georgia is particularly interesting as it spells out the riparian doctrine in its statutes; however, the law is in conformity with the generally accepted fundamentals of a riparian doctrine.

Georgia has no ground water policy. Until 1953, Georgia had no statutory provisions concerning ground water except for a prohibition against an action of trespass for the supposed interference with the rights of a proprietor of ground water. During the legislative session of 1953, however, Act. No. 8 was passed which authorized the Department of Mines, Mining, and Geology to prospect for underground water supplies at the direction of the Governor. Under this act, the department is to determine the location of such water for public and industrial uses, and if it is found in sufficient quantities, the supply may be leased to municipalities for a period not to exceed 30 years.

Georgia is one of the few states included in this report that has no basic pollution law. There are a few statutes concerning pollution, however, one of which entitles the owner of a non-navigable water course to have the water flow through his land unpolluted. Another provides that the Oil and Gas Commission may require oil and gas operations to be done in such a manner as to prevent pollution of fresh water supplies.

No specific statutes concerning irrigation were found.

Georgia has no specific laws on water conservation but does have a detailed law in connection with soil conservation. The law establishes a State Soil Conservation Committee composed of five members appointed by the Governor for a four year term. The deans of the agricultural colleges within the state, and the directors of certain agencies having functions related to conservation, are ex officio members of the committee. The major functions of the committee are to assist, advise, coordinate, and promote soil conservation districts.

A detailed procedure is provided for establishing soil conservation districts, which procedure is set in motion at the request of any 25 landowners within a proposed district. Each district has five supervisors, two of whom

are appointed by the committee and three of whom are selected by the electors of the district. They are authorized to utilize the services of the county agricultural agents, employ necessary personnel, conduct research and make comprehensive plans relative to soil erosion, carry out control measures to prevent soil erosion, cooperate with other districts and state agencies, and to acquire lands and expend income from the land to carry out the purposes of the law. Such districts may also make available to landowners, on terms as they may prescribe, machines, seeds, and other material which aid in soil conservation. The district and its supervisors are authorized also to take over and administer any soil-conservation, erosion-control, or erosion-prevention project undertaken by the United States or the state or any of its agencies, or to operate or act as agent for any of them. Land-use regulations, governing the use of lands within the district, may be formulated by the district supervisors provided they are approved at an election by the electors of the district. All such land-use regulations that are adopted are binding upon all owners and occupiers of land within the district. Such things as engineering operations, methods of cultivation, and retirement from cultivation of highly erosive areas may be covered by land-use regulations, provided such regulations are uniform.

The only unusual aspect of the Georgia Statute pertaining to drainage and flood control is the method of tax assessment. (Note: This method is the same as that in Section 156-71, General Statutes of North Carolina.) The remainder of the drainage law is similar to that of Louisiana. (See "Louisiana" herein.)

Georgia has no state-wide flood control program, each landowner being authorized to build levees to protect his own land from overflow.

No interstate compacts or agreements concerning water were found for Georgia.

There is no information available as to what type of water legislation may be introduced in Georgia in the near future. However, the Georgia Water Use and Conservation Committee is preparing a set of rules for the use of water, and the Institute of Law and Government at the University of Georgia is conducting a research project on water laws. (Note: The North Carolina Department of Conservation and Development has supplied information to the Director of the Division of Research, School of Business Administration, University of Georgia, which is making a detailed study of the problem of water resources.) According to the Director of the Georgia Department of Mines, Mining, and Geology, it is expected that several bills concerning water problems will be introduced in the 1955 session of the legislature.

No. 46 (House Resolution No. 131-449-E), approved March 3, 1955, by the General Assembly

The enactment of this resolution created a Georgia Water Law Revision Commission, composed of a chairman, the Secretary of the Department of Commerce; three members comprising the Commissioner of Agriculture, the Director of Game and Fish, and the Director of Public Health, and eleven members from the State at large appointed by the Governor. The powers and duties of the Commission are: To make studies and recommend legislation regarding pollution of the streams within the state from industrial and governmental uses; to make studies and recommend legislation as to the conservation and use of water for irrigation, industrial, domestic, and governmental uses; to report to the 1956 session of the General Assembly and to each regularly convened session thereafter; to exercise any duties required to enable the State to participate in any present or future program of the Federal Government relating to

water conservation, flood control, or pollution control; to cooperate with Federal and State agencies; to inquire into the water, stream-pollution, and sanitation laws of Georgia, as well as the Constitution and laws of the United States; to receive suggestions and statements from interested persons, groups, and all governmental agencies; and to make investigations and inquires as will in its judgment assist it in the discharge of the duties conferred upon it. Nothing in the resolution shall be construed to affect the Georgia Waterways Commission created by a resolution approved December 10, 1953. (Note: The Board of Commissioners, Georgia Department of Commerce, has advised the North Carolina Department of Conservation and Development that information supplied by the latter to the former will be very useful to the members of the Georgia Water Law Revision Commission.)

Sept. 1955 Issue, Journal, American Water Works Association

There is nothing significant to report for Georgia. The State Water Law Revision Commission - whose purpose it is to study and recommend changes in water laws - has no current actions now pending.

IDAHO

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

As early as 1939 the Idaho supreme court stated:

"The right of riparian ownership has been abrogated in Idaho."

The State constitution contains, among others, the following provisions:

"The use of all waters now appropriated, or that may hereafter be appropriated for sale, rental or distribution; also of water originally appropriated for private use, but which after such appropriation has heretofore been or may hereafter be sold, rented, or distributed, is hereby declared to be a public use, and subject to the regulation and control of the state in the manner prescribed by law."

"The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses shall never be denied, except that the state may regulate and limit the use thereof for power purposes. Priority of appropriation shall give the better right as between those using the water; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the water for domestic purposes shall (subject to such limitations as may be provided by law) have the preference over those claiming for any other purpose; and those using the water for agricultural purposes shall have preference over those using the water for mining purposes, or milling purposes connected with mining, shall have preference over those using the same for manufacturing or agricultural purposes. But the usage by such subsequent appropriators shall be subject to such provisions of law regulating the taking of private property for public and private use, as referred to in section fourteen of article one of this Constitution."

The controlling statutory provisions are:

" . . . All the waters of the state, when flowing in their natural channels, including the waters of all natural springs and lakes within the boundaries of the state, are declared to be the property of the state, whose duty it shall be to supervise their appropriation and allotment to those

diverting the same therefrom for any beneficial purpose, and the right to the use of any of the waters of the state for useful or beneficial purposes is recognized and confirmed; . . ."

"The right to the use of the waters of rivers, stream, lakes, springs, and of subterranean waters, may be acquired by appropriation."

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Chapter 185 ratifies the Columbia River Basin Compact. The compact provides for the apportionment of the water of the Columbia River and for the general management of the water resources of the Basin. States which may become party to the compact include Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

Chapter 218 ratifies the Bear River Compact. The compact provides for the apportionment of the waters of the River among the States of Idaho, Utah, and Wyoming.

ILLINOIS

Sept. 1955, Issue, Journal, American Water Works Association

The Illinois legislature has before it a bill, with an appropriation of $250,000, to create a commission to study the water and drought situation in the central part of the state. This group, composed of five members of the Senate and five members of the House of Representatives, would be empowered to make a thorough study of conditions to determine methods of providing water for drinking and commercial uses in central Illinois. Other proposed legislation would create a new agency to handle water supply, flood control, water transportation, and sewage disposal problems in the Chicago metropolitan area. The sum of $50,000,000 has been recommended as state aid to the proposed project, with the remainder to be financed through revenue bonds.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

House Bill No. 239, Sixty-ninth Illinois General Assembly, 1955, provides, among other things, (a) that soil conservation districts are authorized to construct, improve, operate, and maintain flood prevention structures and to acquire land for the general purposes of the district by exercising the power of condemnation; . . .

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Senate Bill 582 creates a Commission consisting of three members of the Senate, three members of the House, and five members appointed by the Governor to study the water and drouth situation in Illinois, to determine surface and underground water rights, and to recommend legislation. Appropriation $12,500.

House Bill 983 ratifies the Great Lakes Basin Compact . . .

INDIANA

Sept. 1955 Issue, Journal, American Water Works Association

The number of acres of land under irrigation in Indiana increased approximately 75 per cent each year during the last two years. There was some agitation for immediate control of the use of water for such purposes. Persons closely associated with the water problems involved felt it unwise to enact laws attempting such regulation until a thorough study has been made of the matter. The State Legislature at its last session followed the latter train of thought and passed the Indiana Water Resources Law, the most important legislation of 1955. Under this law, water in any natural stream, lake, or other body of water which may be applied to any useful and beneficial purpose is declared to be a natural resource and "public water" of Indiana. Such water is subject to control and regulation for the public welfare as determined by the General Assembly. Although ground waters were not included in this policy declaration, the act states that the study committee is to conduct a comprehensive survey of water rights and water management laws for both surface and ground waters. A report will be made in 1957.

A bill introduced in the Indiana legislature provided that all water well drillers had to register with the state and must submit well logs to the conservation department. Another proposed law required that a permit had to be obtained from this department before a well could be drilled. Both of these bills, however, failed to pass.

The legislature ratified the Great Lakes Basin Compact, part of the purpose of which is to promote the orderly, integrated, and comprehensive development, use, and conservation of the water resources of the Great Lakes Basin. The states eligible to join this agreement are Indiana, Michigan, Wisconsin, Illinois, Minnesota, New York, Ohio and Pennsylvania, as well as Ontario and Quebec, Canada. At present, besides Indiana, only Michigan and Minnesota have ratified this compact.

The topographic mapping program of Indiana will be materially speeded up after July 1, 1955, inasmuch as the Legislature increased the biennial appropriation for mapping from $100,000 to $400,000. This program will be completed in 10 years.

"Indiana's Water Resources", Bulletin No. 1, Indiana Flood Control and Water Resources Commission

This publication provides a comprehensive view of the modern water problem in the State. The foreword of this publication states that "a plan for development and wide use of the water resources of the various areas in the state is a major goal", and that "this survey thus is intended as a guide toward development of a more definite and better consolidated plan of progress for its future".

IOWA

"Some Current and Proposed Water-Rights Legislation in the Eastern States", by Harold H. Ellis, Symposium Issue, Iowa Law Review, in process

Iowa H.J.R. 4 (1955) created an interim committee to study the state's water resources problems, including the question of water rights.

Sept. 1955 Issue, Journal, American Water Works Association

Several water control bills were introduced in both houses of the legislature, indicating a lot of interest and some confusion. Because more informatic

than available was needed before a policy could be established, the legislature jointly resolved to create a special committee to study state underground and surface waters in relation to water rights, irrigation, and drainage. This group will make a report, including drafts of proposed bills, to the governor by Nov. 15, 1956.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

Chapter 225, Acts of the Iowa General Assembly, 1955 (Senate File 349), (a) confers on soil conservation districts the additional authority to engage in activities related to, and to carry out measures for, the prevention of erosion, floodwater, and sediment damages; and (b) provides that subdistricts of soil conservation districts may be created for watershed protection and flood prevention, with the power to levy a special annual tax, not to exceed 4 mills on the assessed valuation of all real estate within the subdistrict, to be used for the repair, alteration, maintenance, and operation of the works of improvement of the subdistrict.

KANSAS

Report and Recommendations, October 1943, of Committee of the National Water Reclamation Association

The riparian and appropriation doctrines are both part of the water law of Kansas.

Neither the Constitution nor the Statutes declared that waters belong to the public. One Statute provides:

"The right to the use of running water flowing in a river or stream of this state, for the purposes of irrigation, may be acquired by appropriation. As between appropriators, the first in time is the first in right."

Another statute authorizes the diversion from natural beds, basins, or channels, of natural waters west of the ninety-ninth meridian, first for irrigation, subject to domestic uses, and second, for other industrial purposes. This is limited by a subsequent provision to the effect that, south of township 18 and west of the ninety-ninth meridan, waters in subterranean channels or lakes are appurtenant to the overlying lands. Waters may be appropriated by means of artesian wells.

Sept. 1955 Issue, Journal, American Water Works Association

Kansas enacted the Watershed District Act in 1953 and adopted a number of amendments two years later. The duties of the newly created State Water Resources Board are to collect and compile information pertaining to climate, water, and soil, as related to agricultural, industrial, and municipal purposes. This organization will also determine the availability of water supplies in the watersheds.

Reports on Water Resources, The Council of State Governments, October 1955, EX-298

"Water in Kansas, 1955, and Appendix", a report to the Legislature by the Kansas Water Resources Fact-Finding and Research Committee, recommends (1) provision of the necessary organizational structure, personnel, and funds to prepare and maintain a state plan of water resources development; (2)

acceleration of the pollution-abatement and municipal water-supply programs; (3) increase in appropriations for study by the University of Kansas and Kansas State College; (4) continuation and expansion of cooperative programs with the Geological Survey, the Weather Bureau, the U. S. Agriculture Research Service, and the Soil Conservation Service; and (5) licensing of all weather-modification (rain-increasing) operations in Kansas.

SCS-TP-126, Soil Conservation Service, U. S. Department of Agriculture

Chapter 356, Laws of Kansas, 1955 (Senate Bill No. 288), creates a State Water Resources Board consisting of seven members appointed by the governor; prescribes the authority and jurisdiction of the board relating to the conservation, development, management, and use of the water resources of the State; and requires other State and local agencies to cooperate with the board in the carrying out of its duties.

KENTUCKY

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

According to Kentucky's Legislative Research Commission, that State's water law has, until very recently, been based on judicial holdings. However, the 1954 regular session of the General Assembly declared the general water policy of the state and directed the Legislative Research Commission to conduct a study of water resources, usage, and rights. This study has not yet been completed, and its findings are not available. The report is to be presented to the 1956 session of the General Assembly.

The present surface water policy of the state as established by the 1954 session of the General Assembly, is as follows:

1. The general welfare of the people of the state requires that the State regulate the conservation, development, and proper use of its water resources, and that the conservation and beneficial use of water be exercised in the interest of the people.

2. All usable natural water bodies are declared to be a natural resource and subject to control and regulation for the public welfare.

3. Riparian owners may use the public waters in any amount necessary to satisfy their needs for domestic purposes including water for household purposes and drinking water for livestock, poultry, and domestic animals. The use of water for domestic purposes is superior to any other use.

Riparian owners may use public waters for other than domestic purposes provided it will not deny the use of such water to other owners for domestic purposes or impair existing uses of other owners or unreasonably interfere with a beneficial use by other owners.

Riparian owners may impound public water by use of dams or reservoirs when the flow in the stream or the level of the lake is in excess of existing reasonable uses. All dams must have outlets for the release of the water which the owner is not entitled to use.

There is at present no policy in connection with ground water in Kentucky.

Kentucky defines pollution as including the discharge of sewerage,

industrial wastes, and "other wastes" (such as sawdust, garbage, oil and chemicals) into state waters (surface or ground) in amounts which would contaminate the water to a degree that would be detrimental to the public health or animal or aquatic life, or that would render the water unfit for recreational, commercial, industrial, agricultural, or other legitimate uses. Kentucky's pollution law is administered by the Water Pollution Control Commission, a six-man board composed of the Commissioner of Conservation, the Attorney General, the Director of the Division of Game and Fish, and two members appointed by the governor, one representing industry and one representing municipalities. The duties of the commission are to conduct studies and develop a program for the prevention of pollution of state waters, to establish or modify water standards, to pass upon plans for new disposal systems and changes in existing disposal systems, and to continue in effect, revoke, or modify, under prescribed conditions, permits for the discharge of wastes causing pollution. Without a permit from the commission, it is unlawful to install a new disposal system or change an existing one or make a change in an establishment which might cause a substantial increase in the discharge of wastes. The commission may use court proceedings to cause compliance with its orders, and those affected by orders or rules established by the commission may appeal such orders or rules to the courts. The commission is designated as the state agency for the purposes of the Federal Water Pollution Control Act.

No specific statutes concerning irrigation in Kentucky were found.

No laws concerning water conservation were found except for those relating primarily to pollution and flood control. Kentucky has a soil conservation law, however, that is very similar to that of Georgia. (See "Georgia" herein.)

Kentucky provides for the establishment of flood control districts and flood control systems by counties and cities. A "Flood Control and Water Usage Board" has been established and is required to make studies of water resources of the state and the problems of agriculture, industry, conservation, stream pollution, and other allied matters as they relate to flood control and the protection and development of the water resources of the state for municipal and industrial use. A division of the conservation department is authorized to act so as to discharge the State's duties concerning flood control, drainage, and other activities respecting the conservation, utilization, or control of water resources. The drainage laws are similar to the gravity drainage laws of Louisiana.

Pursuant to federal authority, Kentucky has entered into the "Ohio River Valley Sanitation Compact" with several other states within the Ohio River Basin. Briefly, the purpose of the compact is cooperation between the states in the abatement of pollution in the interstate waters within the Ohio River Basin. Each state pledges its cooperation and agrees to enact necessary legislation so as to maintain the waters in a sanitary condition satisfactory for public and industrial water supplies.

At present, Kentucky has no proposed legislation. Such legislation will not be drafted until after the Legislative Research Commission has presented its study on water resources, usage, and rights to the 1956 session of the General Assembly.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

A study of Kentucky water resources and water law by the Kentucky

Legislative Research Commission, to be published in early December 1955, describes the historical development of Kentucky water law, gives a detailed analysis of present law, and sets forth alternative legal approaches. It contains information on the state's water supply including general climatology, evapotranspiration, physiographic regions, drainage-basin and streamflow data, and a brief summary of ground water resources. In the discussion of water use in the state, the report traces the historical change in the use of water and includes data on the present use for industrial, agricultural, municipal and recreational purposes.

LOUISIANA

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Louisiana applies the riparian rights doctrine to water. Unlike other states, Louisiana adopted the riparian rights doctrine direct from the Code Napoleon and not from the English common law.

Several state agencies including the Wild Life and Fisheries Commission, the Department of Conservation, and the State Board of Health, are charged with the responsibility for controlling pollution affecting the various public interests. In addition to these agencies, the Stream Control Commission is given extensive authority to control and regulate pollution from all causes and affecting all types of interests. These agencies all work together in their attempts properly to abate pollution conditions.

The Stream Control Commission is a six-member ex officio board composed of the heads of those state agencies primarily concerned with matters affected by pollution of the waters of the state, namely, the Commission of Wild Life and Fisheries, the President of the State Board of Health, the Commissioner of Agriculture, the Commissioner of Conservation, the Executive Director of the Department of Commerce and Industry and the Attorney General.

The law governing the Commission's work is general in its terms, simply vesting authority in the commission to control or prohibit private disposal and waste into the waters and streams which would tend to be harmful to the public health or welfare, or tend to destroy fish, aquatic life, or wild or domestic animals or fowls. To accomplish these purposes, the commission may make necessary rules and regulations, conduct investigations and inspections, establish "such pollution standards for water of the state in relation to the public use to which they are to be put as it deems necessary", and do all other acts necessary to carry out its functions.

The Stream Control Commission is established as a separate state agency; however, the administration both of the laws governing the commission and of the anti-pollution laws is placed in the Commission of Wild Life and Fisheries, and the agents of his department are made ex-officio agents of the commission.

Several major problems appear to exist in the control of water pollution throughout the State. Among these problems may be noted enforcement of the laws and regulations and orders of the commission, lack of sufficient data to determine the specific causes of pollution in a given area, and the problem of securing effective cooperation from the State of Arkansas.

There is some thought that more effective methods of enforcement of the laws and the orders of the commission would assist the commission in carrying out its purposes. One authority in the field of water pollution has said that

the only effective way to decide upon the correct measures to alleviate any pollution problem is to survey the real needs of the region in which it occurs, which involves a determination of the quality actually required to serve the "optimum local interest". No complete survey has yet been made for the specific purpose of determining the causes and effects of industrial and municipal pollution and the steps that would be necessary to reduce or control pollution sufficiently to permit new industries to locate on the Ouachita River and its tributaries. Much of the harmful pollution in these streams arises in Arkansas. The Arkansas Pollution Control Board is said to be willing to cooperate with Louisiana officials in the matter but is hampered by a lack of funds.

The Constitution of 1921, as amended by Act 261 of 1926, empowers the legislature to authorize police juries throughout the state to create irrigation districts. The police jury is required to establish an irrigation district if petitioned to do so by the property owners of a majority of the land within the district proposed.

The governing body of an irrigation district is a board of commissioners of five members who are appointed for terms of four years by the police jury of the parish creating the district, upon the recommendation of the landowners in the district. The irrigation district is authorized to " . . . conserve the fresh water supply of this state for the benefit of the inhabitants and property owners within the district, to provide water for irrigation and other uses, both within and without the district. The governing authority may do and perform all acts necessary to construct, lease, acquire in any manner, maintain, and operate dikes, dams, reservoirs, storage basins, locks, levees, flumes, and conduits, and acquire or lease any private canals and other bodies of water which may be within or without the irrigation district and necessary or suitable to the operation of the district." In the performance of its duties, the board may acquire or lease necessary equipment, machinery, and supplies; expropriate property; hire necessary personnel; contract with federal or state agencies, and private persons and corporations; incur debt and issue bonds; and levy an acreage tax.

It is interesting to note that, although the statutes authorizing irrigation districts have been in existence since 1938, and although many have expressed the desire for organizing such a district, none has actually been formed. It has been pointed out by the Department of Public Works that the reason for this is that there is no market for the bonds authorized under the provisions of the statute. Under these provisions, the owner of land within the district may not be taxed unless he actually uses water from the natural or artificial waterways within the district. The fact that the question of whether or not the land is to be taxed is entirely within the discretion of the owner of the land is the undesirable feature which the buyers of bonds do not like.

In connection with water, Louisiana has no specific general statute with regard to conservation. Most of the work in connection with water conservation is done by the Department of Public Works, which is authorized to plan irrigation and water-conservation projects and to "initiate, sponsor, and carry through to completion all waterway projects which will further develop and expand the water resources of Louisiana". The Department of Public Works is concerned also with levees, canals, dams, locks, spillways, reservoirs, drainage systems, inland navigation projects, flood control, and river improvement programs and other similar works, all of which are inter-related with water conservation.

The Legislature declared its policy to be to "provide for the conservation of the soil and soil resources of this state, and for the control and

prevention of soil erosion" and that in order to put this policy into effect it is necessary to carry out engineering operations in connection with soil conservation practices.

The Louisiana State University Board of Supervisors is the administrative agency for the soil conservation program. A state soil conservation committee to act for the administrative agency was established with the dean of the Louisiana State College of Agriculture, the director of the state agricultural extension service, and the director of experiment stations of Louisiana named as ex officio members. Among other things, it is the duty of the committee to assist the soil conservation district supervisors, inform the supervisors of the activities and experience of other districts, coordinate the programs of the several districts, secure the cooperation of the United States and its agencies in the work of the soil conservation districts, encourage the formation of districts in the areas where it is desirable that they be created, and disseminate information concerning the activities and programs of the soil conservation districts throughout the state.

Any twenty-five owners of land may petition the soil conservation committee for the organization of a soil conservation district. If the district is found administratively feasible, the committee appoints two supervisors to act with the three elected supervisors as the governing body of the district. After certain prescribed action by the two appointed supervisors, the district becomes a corporate subdivision of the State. A soil conservation district is empowered to (1) carry out preventive and control measures; (2) acquire, maintain, administer, improve, sell, lease, or otherwise dispose of property; (4) make available, to occupants of land, equipment and material, and to assist said occupants in carrying on soil conservation practices; (5) construct, improve, and maintain necessary structures; (6) develop comprehensive soil conservation plans; and (7) perform other functions in connection with soil conservation within the district.

Drainage districts are political subdivisions of the State organized for the purpose of removing water from the land surface by means of gravity or natural drainage, or reclamation or artificial drainage. The Constitution authorized the legislature to create drainage and sub-drainage, and gravity and sub-gravity, districts, and also authorizes cooperation with the federal government in drainage and reclamation projects. The legislature, acting under this authority, has authorized the police juries to create drainage districts on their own initiative; they are required to do so upon petition of the property owners owning a majority of the land in the proposed drainage district. These drainage districts are for the purpose of draining and reclaiming the drained or partially drained marsh, swamp, and overflowed lands that must be leveed and pumped in order to be drained and reclaimed.

Drainage districts are governed by a board of commissioners, composed of five members who must be appointed by the police jury in the resolution creating the district, from recommendations made by a majority, in number, of landowners.

The law provides for the levy and collection of acreage taxes or forced contributions for three purposes: (1) operating expenses in organizing the district, making surveys, assessing benefits and damages, and other expenses incurred by the board before funds are provided for works and improvements; (2) paying costs of carrying out the reclamation plan, plus any additional amount needed for emergencies and for interest on any bonds issued; and (3) maintaining the improvements after completion thereof. Bonds may be issued by the board of commissioners.

The Constitution permits the Legislature by general law to authorize the police juries of the various parishes to create gravity drainage districts and gravity subdrainage districts, and authorizes the districts, through their governing bodies, to incur debt and issue negotiable bonds.

All gravity drainage districts and sub-drainage districts are subdivisions of the State. Gravity drainage districts are governed by five commissioners who serve four-year overlapping terms. The board of commissioners also governs any gravity sub-drainage created within the district. It is a body corporate with all the powers of a corporation. The board has absolute control over the drainage of the district or sub-district within its limts, and may construct all necessary drains, ditches, and canals for the purpose of gravity discharge. It may adopt all rules and regulations which are necessary "to maintain free and unobstructed the flow of water through the gravity canals, ditches, and drains and may pass all needful regulations to keep the beds and banks of all canals, drains, and ditches free from underbrush, trees, and woods". Gravity drainage and sub-drainage districts may levy acreage taxes or forced contributions, incur debt, and issue bonds.

Before any drainage district can be created, the Department of Public Works must approve its formation with respect to the land to be included in it. In fact, among the functions of the Department are the planning, design, survey, construction, operation, maintenance, and repair of levees, canals, drainage systems, flood control, and river improvement programs. It renders engineering, economic, and other advisory services "within the scope of its functions to the extent its facilities will allow, subject to the right to be reimbursed for the reasonable costs thereof".

All constitutions since 1879 have authorized the legislature to provide for a state-wide system of levees and to divide the state into levee districts. Each levee district is under the control of a board of levee commissioners. Levee districts have constitutional authority to levy taxes for the construction and maintenance of levees, levee drainage, and other purposes. The Constitution authorizes the governing authority of the levee district to levy taxes.

The three most important functions carried on by the levee district today are: (1) the payment of the outstanding bonded indebtedness of the district; (2) the expropriation of private land for public use in levee work; and (3) the maintenance of the completed levees. The board acts as the agent for the expropriation of land for levee purposes, but the federal government pays for the land at a fair market value. The federal government then undertakes the construction of the levee and, upon its completion, turns it over to the levee district for maintenance.

At present, there is Legislative approval for only one interstate compact in which Louisiana is involved, namely, the Sabine River Compact. Under the authority of this compact, representatives of Louisiana and Texas are cooperating in the building of a hydroelectric dam on the Sabine River. The necessary investigations, preliminary to the actual construction of the project, are now under way.

The Southwest Louisiana Water Conservation District was proposed during the 1954 regular session of the Louisiana Legislature but was voted upon unfavorably by the people of Louisiana. This was the first attempt made in Louisiane to create an over-all water policy for a territory of any size. The district was to have been composed of 11 parishes and that portion of the Parish of St. Martin lying west of the Atchafalaya River.

The district would have been administered by a board of commissioners composed of the Director of Public Works and one member from each parish in the district appointed by the police jury thereof. The powers and duties of the board, in addition to others, would have been to enter into contracts, purchase property and water rights, expropriate property necessary for the operation of the district, construct and maintain pumping facilities, reservoirs, dams, levees, canals, locks, conduits, pipes, and the like, levy taxes, borrow money, and issue bonds.

The purposes for which the district was to be created were: (1) to furnish fresh water to all of the lands, farms, plantations, properties, cities, towns, villages, industries, corporations, and persons within the district; (2) to preserve, store, control, conserve, utilize, and distribute the waters of the rivers and streams; (3) to prevent the pollution and blocking thereof; (4) to prevent salt water contamination and intrusion; (5) to control drainage within the district; (6) to encourage irrigation; (7) to preserve the equitable rights of the people within the district in the fresh water supply; (8) to regulate the drilling of water wells; (9) to prevent the escape of fresh water within the area until the maximum use of it had been obtained; and (10) to insure a fair and just distribution of all of said waters for all the people of the area.

At present, there is no proposed legislation in the drafting stage in Louisiana. However, there is some interest for revising the state's water policy. For example, many industries would like to see a broad but integrated water policy put into effect. If such a policy existed and would assure these industries of an adequate water supply suitable for their needs, they would locate in Louisiana. This is particularly true as pertaining to certain areas of the state such as the Monroe area. In addition to those industries that have not yet located a plant within the state, there are many that have already made installations that would like to expand if they could be assured of an adequate additional water supply.

There are many farmers that would like to install irrigation facilities but are unable to do so because of the fact that they cannot secure financing for the installation until Louisiana has a water policy acceptable to the lending agencies.

Also, there are many state agencies working with water problems that would like to see a revision of the state's water policy.

The Louisiana Legislative Council recently created a Committee on Water Use and Conservation and directed it to meet with state and federal agencies interested in the problem, to determine whether there is a need for a survey of the water situation, and to report its findings to the Council.

State Water Legislation, 1955, The Council of State Governments, BX-299, December 1955

Act No. 455 (HB 2) appropriates $40,000 to the Department of Public Works for the purpose of conducting a survey of the water resources of Louisiana. It provides that the Louisiana Legislative Council shall supervise the survey and that other agencies of the state shall cooperate in the study. The Department is to submit its findings and recommendations to the Council prior to the 1956 legislative session.

MAINE

Sept. 1955 Issue, Journal, American Water Works Association

According to J. Elliott Hale, Chairman of the Water Pollution Committee of the Maine Water Utilities Assn., this state has already classified the quality of about 10,000 miles of its waterways. An additional 8,000 miles are to be determined by the present legislature, leaving about 18,000 miles unlabeled, a good portion of which will be quite difficult to improve. Hale also lists these resolutions or acts concerning water pollution control:

1. No. 1,092, to study all phases of stream pollution and authorizing $75,000 for the work (about $250,000 will be required)

2. No. 1,204, to add members to the Water Improvement Commission (two additional members to the seven-man board are proposed in order to overcome the alleged influence of two other persons)

3. An unnumbered act, to create an authority for each river basin in the state.

4. No. 1,331, to classify municipalities and industries with the aim of having the former set aside money each year to build up a reserve for waste treatment.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

"Pollution", First Report to Ninety-Seventh Legislature, Legislative Research Committee, summarizes the points of view of various interested parties and recommends a study of anti-pollution laws of other states, formulation of a legislative program based on experience with these laws, and the seeking of ways and means to combat pollution from sources outside the State.

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Chapter 450 (SP 450-LD 1242) adds Chapter 79A to the revised statutes authorizing and directing and Governor to execute the New England Water Pollution Control Compact with any one or more of the states of New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, and New York.

Chapter 425 (HP 1231 - LD 1514) amends laws on water pollution control. The Water Improvement Commission is to make recommendations to each legislature for raising the classifications of waters with respect to pollution abatement to the highest classification economically feasible. The Commission is designated the public agency for the acceptance of federal funds in relation to water pollution control and water resources.

MARYLAND

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Maryland follows the riparian doctrine and has not departed from the generally accepted principles of the doctrine except in the instances hereinafter discussed.

The principal portions of the law of Maryland regulating the use of water may be divided into two categories, "water use" which relates to both ground water and surface water and "well drillers" which relates only to ground water.

The law declares it to be the policy of the state to control the use of surface and ground waters in accordance with the best interests of the state. The Water Resources Commission of Maryland has been directed to develop a general water resources conservation program. The program is to guide the commission in the issuance of water, water power, dam, reservoir, and other permits. The commission is authorized to make all rules proper to carry out the provisions of the law.

Since January 1, 1934, it has been unlawful to appropriate any waters (ground or surface), or construct or change any reservoir, dam, or waterway obstruction, or in any manner change or diminish the course, current, or cross section of any body of water, without a permit from the Commission.

The law does not apply to or affect the following uses of water or structures:

1. Domestic and farming purposes,
2. An approved water supply of a municipality,
3. Any riparian or vested right, or any particular use in existence on January 1, 1934, provided it is not thereafter abandoned,
4. Dams or obstructions 10 feet or less in height above the elevation of the stream bed,
5. Reservoirs with a storage capacity of less than one million gallons,
6. Structures for the impounding of water over non-tidal swamp lands for propagation of muskrats, and
7. Farm ponds (for purposes of soil conservation, fish propagation, water for stock, and fire protection) which meet certain requirements of construction, depth, surface area, drainage area, and distance from houses and roads.

The procedure for obtaining permits requires the filing of an application with the Commission and a public hearing. The application must be accompanied by specified data and other data as required by the Commission. Notice of the public hearing must be given by the applicant to the public and to county and city officials. Before acting on an application, the Commission must weigh all advantages and disadvantages to the public and make appropriate investigations. In emergencies, or for minor repairs, the Commission may, without notice or hearing, grant permission for repairs. Repairs necessary to save life or property may be made without application, but notice must be given promptly to the Commission.

The Commission must prescribe a time limit, of not more than two years from the granting of a permit, in which the construction, reconstruction, or repair must be begun and/or the appropriation of water must be made. The commission must also prescribe a time limit, of not more than 5 years from the granting of a permit, in which construction, or repair must be completed. Both time limits may be extended for good cause.

Any violation of the law, or rules and orders of the Commission, is punishable by a fine up to one thousand dollars, or imprisonment up to one year, or both. All orders or rules of the Commission may be appealed to the court.

In addition to the preceding law applicable to ground or surface waters, Maryland law contains special sections on water-well drillers. The law provides for the Department of Geology, Mines, and Water Resources to examine and license well drillers, to charge fees for and revoke their licenses, and to make inspections, and supervise the construction, repair, maintenance, and abandonment, of wells.

Well drilling must be supervised by a licensed well driller, but no well may be started until the driller has obtained a permit from the Department and the person from whom the well will be drilled has secured a permit for the appropriation from the Commission. The well driller is required to file a report with the Department upon completion of the well. Owners of wells must maintain them in accordance with the rules of the Department, must not waste the waters and, upon abandonment, must notify the Department and properly seal the wells. It is unlawful to do business as a well driller without a permit or license, or to violate the orders of the Department. Penalty for violation is a fine of from 10 to 50 dollars, and each day's violation is a separate offense.

The Water Pollution Control Commission administers the general pollution law of Maryland. The law deals with ground and surface water, including the portion of the Atlantic Ocean and the Chesapeake Bay within the jurisdiction of the State. The law is similar in other respects to the general pollution laws of Louisiana.

No laws concerning irrigation in Maryland were found.

The conservation, drainage, and flood control laws of Maryland are similar to those of Georgia.

Maryland is a member of the Potomac Valley Conservancy District, which is an interstate compact with Pennsylvania, Virginia, and the District of Columbia. The objective of the District is to control and prevent pollution of the waters of the Potomac drainage area by sewage, industrial, and other wastes.

Maryland does not contemplate any major changes in the state's water law at this time.

Sept. 1955 Issue, Journal, American Water Works Association

A bill introduced in the Maryland legislature early in 1955 would permit Baltimore to issue $45,000,000 in water bonds for tapping the Susquehanna River. This work is now going ahead, and it may be assumed that construction permission has been granted by the legislature.

SCS-TP-126, Soil Conservation Service, U. S. Department of Agriculture

Chapter 171, Laws of Maryland 1955 (House Bill 555), authorizes the Board of County Commissioners of Worcester County to carry out, maintain, and operate works of improvement for soil conservation, water conservation, flood prevention, and agricultural phases of the conservation, development, utilization, and disposal of water including group drainage projects.

State Water Legislation, 1955, The Council of State Governments, EX-299 December 1955

Joint resolutions to create a special commission to study the water resources problem in Maryland were adopted. The members of the Commission will be appointed by the Governor, President of the Senate, and the Speaker of the House to represent various agricultural, industrial, municipal and public health, and sporting and recreational interests. Report due September 1, 1955.

MASSACHUSETTS

Sept. 1955 Issue, Journal American Water Works Association

Governor Herter assigned state commissioners on natural resources, agriculture, public health, commerce, public works, and metropolitan districts to study and report on the purity and quality of Massachusetts water supplies.

MICHIGAN

Some Current and Proposed Water-Rights Legislation in the Eastern States, by Harold L. Ellis, Symposium Issue, Iowa Law Review, in process

A proposed appropriation-doctrine statute was given some consideration in 1954 by the Interim Legislative Committee established to study water problems in Michigan. In some respects this proposed bill would appear to be the least far-reaching of the lot (South Carolina, North Carolina, Arkansas, Michigan and Wisconsin), for it provided that the holder of any tract of land, that conforms to the definition of riparian land included in the act, would have a "Class A vested right" to the "reasonable use" of the stream or other body of water to which his land is riparian, for the purposes of domestic use (as defined in the act), power, recreation, and fishing on or in connection with such land. Failure to use water for such purposes apparently would not impair a riparian owner's right to do so in the future.

Actual application of water to any "reasonable beneficial use" other than of the type constituting Class A vested rights, prior to the effective date of the act, would be deemed to create "Class B vested rights" in such users to the extent of the actual application of the water for these purposes, providing such use had not been abandoned.

Water in any stream in excess of the requirements needed to satisfy Class A and B rights could be appropriated, on application to the Michigan Water Resources Commission, for use on designated lands, "riparian or non-riparian". Holders of Class B and appropriative rights would be given priorities based on the time of application to beneficial use in the case of Class B rights, and on the time an application is filed in the case of appropriative rights. No one (other than holders of Class A rights) could divert or impound any water required to satisfy the rights of Class B or appropriative rights with earlier dates of priority. This, in effect, would create retroactive priorities among holders of "Class B vested rights", who otherwise would not have had such preferences.

Although the proposed bill includes no provisions for establishing preferences as between different types of uses, other than as outlined above, if in the opinion of the Commission there appear to be "assured prospective uses" of the water that would better serve the public interest or general welfare, it may reject or postpone approval of an application.

The fate of the proposed bill is uncertain. One objection which has been raised concerns the constitutionality of such a proposal. Recent correspondence from a former proponent of the bill manifests serious apprehension regarding it on other grounds, and suggests that consideration perhaps should be given to an alternative procedure which would leave the administration of water rights in the courts, with certain legislative directives.

Sept. 1955 Issue, Journal, American Water Works Association

A resolution introduced in the 1955 Michigan legislature provides for a special committee of the legislature to continue the study of the codification of the drainage law and problems of water resources in the state. The

erosion problems arising from high water levels of the Great Lakes will also receive attention in the report which is to be made in 1956. A rather comprehensive water well control bill to establish rules and regulations concerning well construction was recently considered. The proposed act would have provided for conservation and appraisal of the ground water resources of the state. Michigan is a member of the Great Lakes Basin Compact. (See "Indiana".)

State Water Legislation, 1955. The Council of State Governments, PX-215, December 1955

Public Act 82 (HB 20) authorizes any city adjoining or included in a metropolitan water supply or sewage disposal district to purchase the water supply or sewage disposal system. The city systems then may provide services to the same area formerly supplied by the metropolitan district.

Public Act 233 (SB 1232) authorizes any two or more municipalities to incorporate a municipal authority for the purpose of acquiring and operating a sewage disposal system and/or a water supply system. Such authority will be a public body corporate with power to sue and be sued and to issue bonds. The contracting municipalities will include in their annual tax levy amounts sufficient to meet debt obligations. The authority may contract to supply sewage treatment facilities and supply water to nonconstituent municipalities.

MINNESOTA

Some Current and Proposed Water-Rights Legislation in the Eastern States, by Harold H. Ellis, Symposium Issue, Iowa Law Review, in process

The Minnesota Legislature in 1937 enacted a statute, which was replaced in 1947 with a similar statute that provides, among others, that, "subject to existing rights, all waters in streams and lakes . . . which are capable of substantial public use, shall be public waters, and shall be subject to the control of the state", and no one may lawfully "appropriate or use any waters of the state, surface or underground" without a permit from the Commissioner of Conservation, except for the use of water for domestic purposes serving less than 25 persons, the use of water for any purpose "originating within the geographical limits of any municipality", and "any beneficial uses and rights in existence on July 1, 1937". However, each such permit (except for certain mining purposes) shall be subject, among other things, to cancellation "at any time if deemed necessary" by the Commissioner, "for any cause for the protection of the public interests". Such a reservation apparently is expressly included in most permits, and permits which have been issued for irrigation and most other purposes expressly refrain from affecting the rights of riparian owners or the public as against the permittee. A few permits have been issued to nonriparian owners for temporary sand and gravel washing, providing they had obtained access rights from a riparian owner.

There appear to be few specific guide lines or standards, in the statute or statutes, with respect to the granting or denial of permits, other than that permits are not to be refused unless the proposed use is wasteful, dangerous, impractical, or would be against the public interest or, in the case of irrigation, would deprive another of his rightful share of such waters, which he has requested. Permits have included limitations on rates of diversions, and certain other express conditions. Limitations have sometimes been included against lowering the stream level below a certain minimum level, particularly on the smaller streams.

Sept. 1955 Issue, Journal, American Water Works Association.

After a two-year study, the Minnesota legislature passed a bill covering the conservation of the natural resources of the state through better land utilization, flood control, and controlled watershed districts.

Cities and towns do not have to obtain a permit to develop a water supply in municipal limits, but one must be secured for projects undertaken outside the incorporated area. Recently amended laws to conserve ground water and to prevent waste are administered by the three-man State Water Board.

Minnesota is a member of the Great Lakes Basin Compact. (See "Indiana").

Reports on Water Resources, The Council of State Governments, October 1955, EX-298

The report of the Legislative Interim Commission on water conservation, drainage and flood control, 1955, contains the following recommendations.

a. The State Division of Water of the Department of Conservation should be expanded to become the central agency to administer water laws, giving technical advice to other agencies and units of government, operating state hydraulic structures, and setting standards; to acquire information needed for sound policy; and to coordinate efforts in sound policy; and to coordinate efforts in the field of water use at all levels of government.

b. There should be a State Board of Water Policy.

c. The statutory definition of public water subject to public control should be clarified by express inclusion of private water affected with a public interest.

d. The Division of Waters should study and coordinate all flood control activities, collect data, and represent the state on flood matters.

e. Flood plain zoning should be authorized.

f. The Drainage and Conservancy District law should be amended to state the precise requirement for creation of a district, to show clearly that primary responsibility is local, and to meet the requirements of the federal Small Watershed Act.

g. Local units of government should be given authority to withhold permission to plan for building in suburban areas unless adequate provision has been made for water supply and sewage disposal.

h. Reasonable standards of pollution should be established.

i. Local units should be given authority to exercise more rigid regulation of ground water.

j. The use of surface water for irrigation should be subject to continued regulation.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

Chapter 664, Laws of Minnesota, 1955, establishes, as an agency of the State, the Minnesota Water Resources Board, to be composed of three members

appointed by the Governor, and provides that the board shall perform such functions and duties as shall be prescribed by law. Chapter 799, Laws of Minnesota, 1955, provides for the creation of watershed districts by the Minnesota Water Resources Board.

State Water Legislation, 1955, The Council of State Governments, IX-295, December 1955

Chapter 771 (SF 902) amends the law governing the duties of the Division of Waters. It expands the work of this Division, giving it the authority to study and coordinate all flood control and flood protection projects constructed by local, state, or federal agencies. It also provides for additional work of the Division in the collection of basic water data and for increased assistance to local communities.

Chapter 581 (SF 873) requires the filing of well logs and pumping test data with the Director of the Division of Waters. This act makes it possible for the State to obtain current data with respect to the appropriation and use of ground water.

MISSISSIPPI

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Mississippi adheres to the riparian doctrine and makes no departure from the generally accepted principles of the doctrine.

In December of 1953, the Mississippi Inter-Organizational Committee on Water Resources published a preliminary report on the historical, physical, and legal aspects of water problems in the state. This committee is a voluntary organization and is composed of representatives of the major water-using interests of the state and representatives of various organizations interested in questions of importance to the public. The following information on water rights in Mississippi is digested from the report published by this committee.

Except for the fields of navigation and drainage, the Mississippi laws on water rights have, for the most part, been developed by the courts, and the courts have, to date, followed the riparian doctrine. Most of these laws deal with damage caused by water or to water, and not to the use of water itself. This is mainly a result of the fact that, in the past, the problem in Mississippi has been one of excess of water instead of a shortage of water. It is now because of the recent development in industry and agriculture, and the increase of population that the situation has, in some areas, become reversed.

Mississippi also applies the riparian doctrine to subsurface streams provided the underground channel is known. If the ground water is percolating water, however, the water belongs only to the realty, and the owner may use it in any amount and for for any purpose he desires.

With the exception of several minor features, the pollution law of Mississippi is substantially the same as the pollution laws of other states. Instead of having a separate pollution control board, Mississippi has authorized the Game and Fish Commission to administer the act. While most states' pollution laws relate to surface and ground water, Mississippi's law appears to apply only to surface water. Another unusual feature is the system of inspection fees for industries that discharge wastes or oils into state waters. These fees range from 50 to 200 dollars and are based on the number of persons

employed by the industry.

No Mississippi statutes concerning irrigation were found.

Mississippi has a soil conservation law which is similar to the law of Georgia, but has no specific statutes on water conservation.

Mississippi has drainage and flood control laws similar to those of Louisiana.

Mississippi has entered no interstate compact concerning water problems.

The Mississippi Inter-Organizational Committee on Water Resources has stated that the riparian doctrine should be modified "to the extent necessary to establish a policy of beneficial use and conservation of water, the prevention of waste, and appropriate administrative guidance of water development and use", and that any system adopted should recognize priority of use and at the same time protect any existing rights. Such a system would necessarily require an adequate administrative system in order to protect existing rights and provide proper development of water supplies.

The committee has drawn up an act which would declare the policy of the state to be "that control and development of use of water for all beneficial purposes shall be in the State, which, in exercise of its police powers, should follow a course which will effectuate full utilization and protection of the water resources of the State". The act would also create a commission of seven members to conduct a study into the matter of implementation by the legislature of a water policy. This study would be presented to the 1956 session of the legislature.

In September of 1954, Mississippi created a State Water Resources Policy Commission to study the state's underground and surface water supplies. Its findings will be reported to the 1956 session of the legislature.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

Tentative recommendations in a study of water policy and water law by the Mississippi Water Resources Policy Commission, to be published in November 1955, are as follows:

a. That reasonable beneficial use and conservation be established as a basis for legislation.

b. That a permanent Board of Water Commissioners be established by the Legislature to administer the water policy of the state. The Board's duties would include recommending suitable legislation and programs; making surveys of water supplies, uses, needs, and capabilities through cooperation with federal agencies as appropriate; establishing reasonable, beneficial use standards for all types of water use; and pollution control. The Board should reserve water supplies in areas of surplus for use in later years in areas of shortage. Other state agencies should be required to cooperate with the Board, and the Board should be authorized to cooperate with similar boards in other states, with state and federal agencies, and with water user organizations in the State.

c. Those features of existing water law and usage, deemed suitable

to the condition and needs of the State, should be maintained and established, and lawful right of use should be protected. Water rights should be defined so that users can depend on supplies, and procedures should be established so that new rights can be acquired irrespective of lands.

Water for the Future In Mississippi, A Report to the 1956 Mississippi Legislature by the Mississippi Water Resources Policy Commission, September 1955

This report contains, among others, the following recommendations:

That the existing water policy of the state be enlarged to establish reasonable beneficial use and conservation as the basis for legislation . . .

That a set of definitions be established which will serve to clarify and make more specific existing and any new water laws . . .

That new laws and procedures be established as will make practicable the protection of established lawful rights of use, the guidance in orderly development and use of streams and lakes, and the acquisition of specific and new rights to waters (irrespective of the position of lands).

That water rights be defined so that users will know they can depend on supplies which are specific as to time, place, and amount of use (gallons per day, inches per acre, or other practicable unit of measure).

That procedures be established so that users can acquire specific new rights to the use of water under a system which is not excessive in cost to the users, with full notice to all established right holders, and granted only when the water supply is known to be in excess of established water rights and not contrary to the public welfare.

That such procedure be established as will encourage capture and storage of water (irrespective of the position of lands) in periods of excess for use in periods of shortage and that stream channels may be used for this and conveyance purposes . . .

SCS-TP-126, Soil Conservation Service, U. S. Department of Agriculture, October 1955

Senate Bill No. 1220, Mississippi Legislature, Extraordinary Session, 1955, confers on drainage districts the additional authority to cooperate with the United States under the provisions of Public Law 566 in constructing, operating, and maintaining works of improvement for the prevention of erosion floodwater and sediment damages, and the conservation, development, utilization and disposal of water, exclusive of irrigation; . . .

MISSOURI

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Missouri applies the riparian doctrine and makes no departure from the generally accepted principles of the doctrine.

Missouri has no adequate pollution laws.

No specific Missouri statutes relating to irrigation were found.

Missouri combines conservation with drainage and flood control. The

water laws deal extensively with reclamation of overflowed and swampy lands and the protection of those lands that are reclaimed.

No evidence of interstate compacts was found.

According to the Division of Geological Survey and Water Resources of the State of Missouri, there is no water research program in the state except for a study of samples of water wells and oil and gas tests.

Section 256.060 of the Revised Statutes of Missouri directs the state geologist to make a survey of the water resources in Missouri, but the results of this survey are not yet available.

Sept. 1955 Issue, Journal, American Water Works Association

Governor Donley, in his message to the legislature, recommended the creation of a Water Resources Commission. The House of Representatives passed a bill creating watershed conservancy districts to handle water resources development at a local level, but the upper chamber did not approve. A Senate committee of five members was created to make a study of water resources problems, water use, and water rights. This group is to report on the need for legislation on watersheds and pollution control.

MONTANA

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

In 1921 the Montana supreme court held:

"Our conclusion is that the common-law doctrine of riparian rights has never prevailed in Montana since the enactment of the Bannack Statutes in 1865; that it is unsuited to the conditions here; . . . "

The State constitution provides:

"The use of all water now appropriated, or that hereafter may be appropriated for sale, rental, distribution, or other beneficial use, and the right of way over the lands of others for all ditches, drains, flumes, canals, and acqueducts, necessarily used in connection therewith, as well as the sites for reservoirs necessary for collecting and storing the same, shall be held to be a public use. . . ."

A statute of the state provides:

"The right to the use of the unappropriated water of any river, stream, ravine, coulee, spring, lake, or other natural source of supply may be acquired by appropriation, and an appropriator may impound flood, seepage, and waste waters in a reservoir and thereby appropriate the same."

Montana is the only Western State which has not provided by statute for a centralized State Control over the appropriation and administration of water.

Statement by D. P. Fabrick, Choteau, Montana, to Missouri Basin Interagency Committee, Lewistown, Montana, July 30, 1953

The enabling act, creating the State Water Conservation Board, was

passed at a special session of the Montana legislature in January 1934, called for this purpose. The Board has five members. The Governor, as Chairman, and the State Engineer serve ex-officio, and three members are appointed for six year terms by the Governor.

The Board has the right to appropriate any unappropriated waters in Montana. The law specifically states that the Board cannot interfere with the vested rights to the use of water.

Under the Board's plan for financing water conservation projects, the water user enters into a contract to purchase the use of the water from a reservoir or canal owned by the Board. A contract is made with the purchaser which defines the number of payments and the amount of each he has to make to return his share of the construction costs. It also sets out his liability for operation and maintenance of the projects and his rights thereunder. These contracts are a tri-party agreement between the individual, the water users' association, and the Board.

The Board has constructed, or participated in the construction of, 173 water conservation projects, representing storage capacity in reservoirs of 410,700 acre feet. An additional 219,000 acre feet of water can be furnished by direct diversion. The total cost of the projects is $16,800,000. They were financed as follows: by funds from the sale of water conservation revenue bonds, $4,300,000; from cash grants mostly from federal agencies, $3,400,000; from material and labor grants, $3,300,000; and from state appropriations, $5,800,000.

The principal projects of the Board were built under the program of the Public Works Administration. Some projects were built entirely with State funds, and in a few instances financial cooperation was provided by local interested people. The Board has also furnished engineering service and constructed five domestic water supply systems for small communities which had no other way of securing a water supply and where construction could be financed locally. The Board has also contributed to, and is cooperating towards construction of, all Montana projects proposed by federal agencies.

This program has always been considered a construction program. There is no desire on the part of the Board, nor is there support on the part of the people of the State, to build up a centralized or top-heavy agency.

(Note: The powers and duties of the Board may be found in Title 89, Chapters 1 and 4, Revised Codes of Montana of 1947.)

Sept. 1955 Issue, Journal, American Water Works Association

Montana, conscious of the need for water control legislation, has endeavored to pass a comprehensive water resources program. Interested groups, such as the State and municipal health and welfare agencies, farmers, wildlife conservationists, and sportsmen, came together and worked out a bill which is acceptable to all.

Legislation was enacted to prevent dumping sawdust and lumber mill waste into streams. A stream pollution bill also passed, but a law to establish priority rights in the use of ground water was not approved. The Columbia River Pact also was rejected.

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

The riparian doctrine is in effect in Nebraska concurrently with the appropriation doctrine. The appropriation statute, however, has been held to have abrogated the doctrine of riparian rights except as to rights which had already accrued, and the riparian owner's claim to a superior right over that of an appropriator from the same source appears to depend in substance upon his having put the waters to actual use before the right of the appropriator accrued.

The state constitution provides:

"The necessity of water for domestic use and for irrigation purposes in the State of Nebraska is hereby declared to be a natural want."

"The use of the water of every natural stream within the State of Nebraska is hereby dedicated to the people of the State for beneficial purposes, subject to the provisions of the following section."

"The right to divert unappropriated waters of every natural stream for beneficial use shall never be denied except when such denial is demanded by the public interest. . . . "

Under this section of the constitution, waters previously appropriated for power purposes may be taken and appropriated for irrigation purposes, upon due and fair compensation therefor; and, inversely, they cannot be appropriated arbitrarily for irrigation purposes without just compensation.

A statute further provides:

"The right to the use of running water flowing in any river or stream or down any canyon or ravine may be acquired by appropriation by any person."

The supreme court of Nebraska has stated that running water is publici juris; that the use of such water belongs to the public and is controlled by the state in its sovereign capacity; and that a riparian proprietor cannot appropriate water without the permission of the State.

The Nebraska constitution provides that the use of water for power purposes shall never be alienated, but may be leased or otherwise developed as prescribed by law.

Nebraska Legislative Council Report No. 61, October 1954

This report recommends that reclamation districts be authorized to use funds from mill levies to repay contracts with the U. S. Bureau of Reclamation, and that, in view of the rapid growth of pump irrigation and of the fact that a program of regulation of ground water resources might be needed, a study of this problem be made.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

Legislative Bill 21, Legislature of Nebraska, 67th Session, 1955, provides that certain counties shall be authorized (a) to appropriate such funds

as are necessary to fully develop and carry out coordinated flood-control programs for such counties, (b) to make an annual tax levy of not to exceed one-fourth mill on the dollar upon the assessed value of all taxable property in such county for such purpose, and (c) to employ, as an aid to carrying out such purpose, the services of any nonprofit corporation or organiation that has as one of its principal objectives the promotion or development of flood control upon any river or its tributaries within such counties.

Sept. 1955, Issue, Journal, American Water Works Association

Nebraska is concerned about the increased use of ground water for domestic, agricultural, industrial, and other uses. The Legislative Council appointed a committee of seven to make a comprehensive and detailed study of ground and surface water. The final report is to include the results of the study, recommendations, and proposals for necessary legislation, if any.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

Nebraska Legislative Council Committee Report No. 41, August 1952, outlines flood and drought problems in the State and discusses a watershed approach to the solution of these problems. It considers the arguments for and against this approach and especially those applying to legislation considered previously in Nebraska. The Council Committee endorses the concept of watershed districts and includes the summary of a tentative bill in its report.

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Legislative Bill384 amends the law relating to watershed districts. It changes the conditions for forming such watershed districts and modifies the procedure for establishing them. . .

Legislative Bill 21 amends the statutes relating to flood control. It authorizes the counties of the state to levy taxes, to appropriate funds for flood control programs, and to employ the services of any non-profit corporation or organization that has, as its primary objective, promotion of flood control. This latter provision allows the county to employ a locally-formed watershed association to act as its agent.

Legislative Bill 428 amends the statutes relating to irrigation. It eliminates requirements for issuance and filing of a certificate of appropriation, substituting a system of filing an application to establish a priority date for appropriation. If application is made by any other than the owners of the reservoir, the applicant must show that he has acquired a sufficient interest in the reservoir to entitle him to the water proposed to be used. Water can be conducted along natural streams and withdrawn provided certain procedures are followed and due allowance made for losses in transit.

NEVADA

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

The Nevada supreme court, in 1885, emphasized its rejection of the

riparian doctrine. As recently as 1926, it stated that "the doctrine of riparia rights has been held not applicable to conditions in this State, . . . "

The Nevada constitution contains no provisions on water rights. The statutes provide:

"The water of all sources of water supply within the boundaries of the State, whether above or beneath the surface of the ground, belongs to the public."

"Subject to existing rights, all such water may be appropriated for beneficial use, as provided in this act and not otherwise."

The statutes also provide for the appropriation of ground waters, and for acquiring rights for the watering of range livestock.

The water code provides an exclusive procedure for initiating an appropriation of water, by making application to the State engineer for a permit to appropriate and for completing the appropriation.

Sept. 1955, Issue, Journal, American Water Works Association, page 856

Four important bills were passed by the Nevada legislature. One of these provided for the conservation and distribution of ground water in each water district. This bill and an amendment to the existing law permitted the State engineer to investigate a ground water basin that he felt was not being replenished naturally and to start a program of curtailment. He was also given the power to designate priority of use. In some parts of Nevada, the highest priority is given to cattle grazing rather than to domestic or irrigation uses.

Another bill provided for the development of cloud-seeding programs. A third bill, parallel to one in the California legislature, initiated a study of the waters of Lake Tahoe and the Truckee, Carson, and Walker Rivers, which are interstate streams. The last bill created water conservancy districts, whose directors are to be appointed by a court rather than to be elected by public elections. Formation of such areas could be initiated by property owners whose total assessed valuations were more than $50,000, an amount at least 10 per cent of the required assessed value for the entire locality.

State Water Legislation, 1955, The Council of State Governments, BX-299, December, 1955

Chapter 67, Statutes of Nevada, 1955 ratifies the Columbia River Compact . . .

Chapter 176 (AB 375), the Watershed Protection and Flood Prevention District Act of 1955, provides for the organization and operation of districts.

Chapter 109 (SB 60) amends the soil conservation districts law by authorizing the State Soil Conservation Committee to make changes in the boundaries of soil conservation districts, and prescribes the procedure to be followed in making such changes.

NEW HAMPSHIRE

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

House Joint Resolution No. 6, New Hampshire Legislature, 1955, appropriates $4,000 for the biennium to enable the Water Resources Board to assist in carrying out joint Federal-State-local projects for watershed protection and flood prevention in small watersheds in cooperation with the Federal Government under Public Law 566.

Chapter 239, New Hampshire Laws, 1955 (House Bill No. 496), provides that each of the 10 counties within the State is incorporated into a soil conservation district; provides that each district shall be governed by five supervisors appointed by the State Soil Conservation Committee; and prescribes the powers and duties of districts, including the power to engage in activities relating to, and to undertake measures for, the conservation of soil resources and the control and prevention of soil erosion, land drainage and the prevention of floodwater and sediment damages.

State Water Legislation, 1955, The Council of State Governments, EX-299, December 1955

Chapter 196, Laws of 1955, extends exemption from local taxation for twenty-five years to industries that cooperate in the installation of facilities to reduce water and air pollution (underscoring supplied).

NEW JERSEY

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

New Jersey is a member of the Delaware River Basin Water Commission Compact. New Jersey is also a member of a reciprocal agreement concerning control of pollution in the waters of the Delaware River Basin (See "Delaware" herein.)

Sept. 1955 Issue, Journal, American Water Works Association

In New Jersey, many water bills were introduced in the 1955 legislature because of the proposal by the North Jersey Dist. Water Supply Commission to carry out the Round Valley Project on behalf of several communtities. Application for diversion rights has been made to the State Water Policy and Supply Council, and the first hearing on this matter has already been held.

Most people in northern New Jersey want the project, but a small block of senators from rural counties object. Bills submitted to the legislature range all the way from proposing a $300,000 appropriation to buy the site (although this is only a fraction of the cost of the land), to a motion for holding a referendum to authorize spending $85,000,000. Engineers have been engaged at a cost of $164,000 to make a further report, which some persons regard as unnecessary.

At the end of May, a new bill was introduced to extend the date (from Jul. 1 to Dec. 31) by which time Pennsylvania must approve the agreement permitting construction of a dam at Wallpack Bend. This action has been viewed in some quarters as an attempt to block the Round Valley Project.

South Jersey has been promised a supply from the state-owned Wharton Tract. Some of the comtemplated legislation calls for starting work immediately on this undertaking. Another bill provides for licensing those engaged in artificial weather control (rain-making).

To date, none of the bills discussed here has passed. Shortages of water in various parts of the state continue to plague the citizens.

(Note: The information regarding Maine, Massachusetts, Connecticut, Delaware, Pennsylvania, New York, Maryland, and New Jersey, contained on pages 846-848, September 1955 Issue Journal, American Water Works Association, was taken from a paper presented at the Annual Conference of the Association, in Chicago on June 13, 1955 by Charles H. Capen, Chief Engr., North Jersey Dist. Water Supply Com., Wanaque, N. J. Other information in Mr. Capen's paper follows:

No details about water legislation have been received from New Hampshire, Vermont, or Rhode Island.

Most of the North Atlantic States have serious water problesm, a fact shown by proposed legislation. More action and less discussion is needed in the future.)

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

A report on a preliminary survey of New Jersey water resources development, by Tippets-Abbott-McCarthy-Stratton, Engineers, for the Legislative Commission on Water Supply, July 1955, presents a general review and discussion of all aspects of the New Jersey water supply problem and outlines specific recommended developments to meet both short-term and long-term needs. It includes a study of the supply and demand for water in order to establish the need for additional water supplies in any part of the State. Alternate proposals for water projects are examined. New projects are recommended, with cost estimates, and a necessary legislative program is suggested.

A preliminary report to the Legislature by the Legislative Commission on Water Supply, August 1, 1955, based on the report on a preliminary survey indicated in the preceding paragraph, recommends that the powers of the Water Policy and Supply Council within the Department of Conservation and Economic Development be strengthened so that it could enforce scrupulous observance of the terms of water company franchises, could protect ground water sources against pollution or excessive depletion, and could protect lower riparian owners by controlling stream flow; that a Water Supply Board be created within the Division of Water Policy and Supply, authorized to acquire sites and to construct dams, pumping stations, and transmission lines in order to make water available at wholesale rates to distributing agencies; and recommends several specific projects.

NEW MEXICO

Reports and Recommendations, October 1943, of Committee of the National Reclamation Association

The doctrine of riparian rights is not recognized in New Mexico. This has been consistently stated in the decisions. The following statement is typical:

"The common law of riparian rights was not suited to an arid region and was never recognized by the people of this jurisdiction."

The State constitution provides:

"All existing rights to the use of any waters in this State for any useful or beneficial purpose are hereby recognized and confirmed."

"The unappropriated water of every natural stream, perennial or torrential, within the state of New Mexico, is hereby declared to belong to the public and to be subject to appropriation for beneficial use, in accordance with the laws of the State. Priority of appropriation shall give the better right."

"Beneficial use shall be the basis, the measure and the limit of the right to the use of water."

The statutes provide:

"All natural waters flowing in streams and water courses, whether such be perennial or torrential, within the limits of the state of New Mexico, belong to the public and are subject to appropriation for beneficial use."

Water Laws of New Mexico, 1955 Supplement, John H. Bliss, State Engineer

Chapter 75 of New Mexico Statutes covers water and irrigation. Article 3 of this chapter sets forth the appointment, removal, and duties of district water masters. Article 5 contains provisions for appropriation and use of water, permits and licenses, and construction of works. Articles 32 and 34 are pertinent to conservancy districts and the Interstate Stream Commission, respectively.

Sept. 1955 Issue, Journal, American Water Works Association, page 855

Governor Simms of New Mexico recommended, as follows, that favorable legislative consideration be given to a bill:

. . .

" . . . which will have as its purpose the anticipating of revenues and the placing of monies received by the Water Reservoir Income Fund in a new revolving fund which would be created.

This revolving fund would be used to provide money needed by the State and its subdivisions to participate in a program of development and improvement of small reclamation projects with federal assistance under authority of legislation now pending in Congress . . . I also urge that the surveys of underground and surface water, already in progress, should be speeded up, and to this end you should be prepared to appropriate the necessary money."

(Note: The information regarding Oklahoma, Colorado, Arkansas, Texas, and New Mexico, contained on pages 854-855, Sept. 1955 Issue, Journal, American Water Works Association, was taken from a paper presented at the Annual Conference of the Association in Chicago on June 13, 1955 by M. B. Cunningham Supt. & Engr., Water Dept., Oklahoma City, Okla.)

"The New Mexico Law of Water Rights", by Wells A. Hutchins, LL.B., Production Economics Research Branch, Agricultural Research Service, United States Department of Agriculture, 1955

The statute governing the appropriation of water contains procedure for the adjudication of water rights. Such adjudications are made exclusively in the courts. Upon completion of the hydrographic survey of any stream system by the State Engineer, the Attorney General is authorized to initiate a suit on behalf of the State to determine all water rights concerned, unless

such suit has been brought by private parties. Also, the Attorney General is directed to intervene on behalf of the State in a suit begun by private parties if notified by the State Engineer that in his opinion the public interest requires it. In any suit to determine water rights all claimants are to be made parties, and the court is required by statute to direct the State Engineer to furnish a complete hydrographic survey. Upon the adjudication of rights to the use of waters of a stream system, a decree is issued adjudging the several water rights to the parties involved, containing all conditions necessary to define the right and its priority. (p. 37)

The State Engineer has supervision over the apportionment of waters, may create water districts and may appoint watermasters upon application of water users within districts. Such supervision extends to licenses issued by the State Engineer and his predecessors and to the adjudications of the courts. Community acequias (irrigating trenches), established and in operation at the time of enactment of the water law of 1907, are accorded certain preferences with respect to public regulation. (pp.37-38)

New Mexico was not the first State to enact ground-water legislation. However, the New Mexico Statute, after having been declared unconstitutional and subsequently reenacted in corrected form, was the first of the Western State ground-water administrative acts to be put into extensive operation and has set the pattern for much of the subsequent legislation in that field in the West. The constitutionality of the present statute was sustained, under attack, nearly 20 years after its enactment. (p.47)

Sections providing for the regulation of drilling of wells for water from an underground stream, channel, artesian basin, reservoir, or lake, the boundaries of which had been determined and proclaimed by the State Engineer, were added to the ground-water statute in 1949. (p.57)

A statute provides for the organization of artesian conservancy districts for the purpose of conserving the water in artesian basins, the boundaries of which have been determined by investigations and where such waters have been beneficially appropriated. (p. 58)

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Chapter 91 (HB 74) amends Section 75-5-17, New Mexico Statutes, annotated, 1953 Compilation, to give the State Engineer authority to allow diversion for irrigation purposes at a rate consistent with good agricultural practices, not to exceed the limit imposed by permit or by adjudications. Formerly, specific statutory limitations governed diversions, and there was no provision for administrative discretion.

Chapter 266 (SB 95) authorizes the New Mexico Interstate Streams Commission, departmental agencies, political subdivisions, conservation districts, water and sanitation districts, and similar organizations to acquire, manage, an and dispose of water rights and other property necessary for the construction of works (reservoirs, dams, canals, wells, mains, pipelines, power plants, etc.); to contract for, or construct, and maintain such works, and to make investigations and surveys of water resources. The works may be financed by the issuance of revenue bonds or by the use of Federal grants. This act makes it possible for local political subdivisions and districts to finance and construct projects and to obtain aid from the Federal Government.

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

New York is a member of the Delaware River Basin Water Commission Compact. New York is also a member of a reciprocal agreement concerning control of pollution in the waters of the Delaware River Basin. (See "Delaware" herein)

Sept. 1955 Issue, Journal, American Water Works Association

The New York City Board of Estimate approved an appropriation of $83,500,000 to start the construction of the Cannonsville dam and reservoir on the west branch of the Delaware River. The ultimate cost is estimated at $140,000,000.

State Water Legislation, 1955, The Council of State Governments, BX-299, December 1955

Senate Resolution 103 continues the Joint Legislative Committee on Natural Resources. Areas of study assigned to the Committee include the conservation, preservation, and use of natural resources, agricultural and forest lands, fish and game, and abatement of water pollution. The Committee has established a special advisory committee on water resources and water rights. The legislature appropriated $35,000 and reappropriated $6,031.50 for the Committee. Its report is due March 15, 1956.

Chapter 28, Laws of 1955, continues the Temporary State Flood Control Commission. The legislature appropriated $40,000 and reappropriated $7,351.19 for the work of the Commission.

Chapter 696 of the Laws of 1955 creates the Temporary State Commission on Irrigation. It is to study the use of irrigation as a means of expanding and stabilizing the agricultural economy of the state. The legislature appropriated $25,000 for the Commission and directed it to report on March 31, 1956.

NORTH DAKOTA

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

The riparian and appropriation doctrines are both recognized in North Dakota.

The Constitution provides:

"All flowing streams and natural water courses shall forever remain the property of the state for mining, irrigation and manufacturing purposes."

A statute provides:

"All waters within the limits of the State from all sources of water supply belong to the public and are subject to appropriation for beneficial use."

Prior to amendment in 1939, this section had excepted navigation waters from appropriation. Another statute reads:

"The owner of the land owns water standing thereon, or flowing over or under its surface, but not forming a definite stream. Water running in a definite stream formed by nature over or under the surface may be used by him as long as it stands there; but he may not prevent the natural flow of the stream or of the natural spring from which it commences its definite course, nor pursue nor pollute the same."

A further statute authorizes the holders of agricultural land to impound or divert "the flood waters of any draw, coulee, stream or water course, having a flow of not to exceed one-third of one cubic foot or water per second during the greater part of the year", by filing a location certificate with the state engineer and securing a permit therefor. Another statute relates to the appropriation of seepage waters from constructed works.

Sept. 1955 Issue, Journal, American Water Works Association

Steps were taken by the North Dakota legislature to maintain drainage systems and to protect the rights of underground water users through consolidation of water controls. The State Water Commission is empowered to issue water-rights permits for municipal, industrial, and irrigation uses. Domestic and municipal needs continue to have the highest priority, apparently because of the increasing demand for irrigation water. North Dakota also enacted a law establishing a 22-county conservancy district to utilize diversion water from the Garrison Dam (constructed by the Corps of Engineers, U. S. Army).

OHIO

Sept. 1955 Issue, Journal, American Water Works Association

The Governor of Ohio, in May 1954, appointed a committee of 100 persons to advise him about the state's water resources problem. One of the first accomplishments of this group was to get the Ohio Legislative Service Commission to review the state water rights laws. (Research Report No. 1, Ohio Legislative Service Com., Columbus, Ohio, 1955). The committee also persuaded the legislature to authorize the Dept. of Natural Resources to collect, study, and interpret all available information, statistics, and data pertaining to the supply, use, conservation, and replenishment of the underground and surface waters in the state. Because this inventory is to be taken on a basin-by-basin basis, the state has been divided into 108 such areas of about 400 square miles for this project. About 4-6 years will be needed before a comprehensive water code or plan can be prepared. Legislation is pending in Ohio for the establishment of a program to remap the state topographically on a $7\frac{1}{2}$ min quadrangle basis.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

A report from the Governor's Executive Committee on Ohio's Water Resources, November 29, 1954, stated that there is a pressing need for an accelerated program for basic inventories of the water and associated natural resources in Ohio river basins, and recommended that a citizen's group be continued as a committee to work with the agencies conducting the water resources study so that the needs of all may be integrated in the final water plan.

"Water Rights in Ohio", Research Report No. 1, Ohio Legislative Service Commission January 1955, examines water rights law with regard to two questions: (1) Does it help or hinder the people in procuring water of

proper quality in the right places and at the right times, and (2) Does it provide a satisfactory means of adjusting interests? It considers the development of water law both in Ohio and elsewhere . . . Water problems in Ohio are outlined to form a basis for deciding about the necessity of water law revision. The report concludes that Ohio needs a positive public policy with respect to water management and water rights. A comprehensive water code probably will be necessary, but more detailed physical knowledge is necessary first. A statewide water inventory of watersheds is needed.

"Drainage Law in Ohio", Research Report No. 2, January 1955, considers features of drainage law which could be improved immediately even in the absence of a comprehensive water code. . . It makes clear the need for a comprehensive body of water law. The study suggests that drainage and other water management facilities should be constructed on a watershed basis. . .

"Water Pollution Control in Ohio", Research Report No. 3, March 1955, discusses state organization for water pollution control, briefly outlining the functions of the agencies involved. It states that the most serious problem in the application of the act to municipalities is the inability of some communities to finance needed improvements. It suggests that it would be desirable for the State Water Pollution Control Board to develop better methods of determining the ability of a village to finance sewage projects and to establish actual minimum project needs and mimimum costs. . .

State Water Legislation, 1955, The Council of State Governments, EX-299 December 1955

Senate Bill 166 (amended) amends section 1521.84 of the Revised Code to give the Division of Water, Department of Natural Resources, authority to conduct basic inventories of the water in each drainage basin and to develop plans on a watershed basis.

OKLAHOMA

Report and Recommendations, October 1953, of Committee of the National Reclamation Association

The riparian doctrine is apparently recognized to some extent in Oklahoma; but so far as a search of the cases has disclosed, the extent of application of the doctrine, in its effect upon the rights of prior appropriators, has not been decided by the state supreme court. The appropriation statute, however, has been before the court, as noted below.

A statute, declaring the unappropriated water of the ordinary flow or underflow of streams and storm or rain water, in those portions of the state in which irrigation was beneficial for agriculture, to be the property of the state and subject to appropriation, was omitted from the Revised Laws of of 1910 and thereby repealed, for the act adopting the Revised Laws of 1910 provided that all general or public laws not contained in the revision were thereby repealed. The present statute, however, privides a complete and exclusive procedure by means of which "water" may be appropriated, but does not specify the waters that are subject to appropriation. An early statute, copied from a very early enactment of the Territory of Dakota, provides that the owner of lands owns water standing thereon, or flowing over or under its surface, but not forming a definite stream. The effect of these enactments apparently is to make the unappropriated waters of watercourses open to appropriation, subject to whatever private rights the courts may hold to have vested owing to one reason or another; and

subject also to the reasonable use of diffused surface waters on his land, if tributary to watercourses, if the courts should apply this restriction to the use of such waters. There is also a statute concerning the appropriation of seepage water from constructed works.

The Oklahoma Supreme Court has placed a construction upon the procedure for acquiring water rights that differs radically from that in the other states; namely, that a hydrographic survey and court adjudication are conditions precedent to the granting by the state administrative officer of a valid permit to appropriate water.

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Oklahoma has two separate water policies, one on surface water and one on ground water. Their policy on ground water was established in 1951 and is a modern system of laws which recognize and deal with existing and foreseeable problems of ground water consumption. A legislative council has just completed a study of the ground water law and has recommended only a few changes to be made at the next session of the legislature.

There is also a legislative council committee studying the surface water policy. This committee is encountering more difficulty in their study, as the Oklahoma laws on surface water are inadequate and need to be completely revised.

Sections 1000-1019 of Title 82 of the Oklahoma Statutes of 1951 are known as the Oklahoma Ground Water Law. The purpose of the act is to conserve and protect the ground water resources of the State and to provide reasonable regulations for the taking and use of ground water. The provisions of the act are administered by the Oklahoma Planning and Resources Board. Application must be filed with the board to establish priority of a claim to appropriate water from a ground water basin in which there has been no court adjudication of existing rights. The board may, on its own petition or on petition of water users within a basin, initiate the designation of a critical ground water area. No permit will be issued if the board finds that such use would result in depletion in excess of annual ratio of recharge, or unless the applicant owns or has a valid lease to land overlying a basin. The board is authorized to stop waste by any user. Ground water surveys of the various basins of the State must be made by the board. After completion of any ground water survey, the board must present all data to the attorney general, who shall enter suit on behalf of the State for determination of all existing rights in such basin. All claimants must be notified of the court action, and all rights must be adjudicated.

In connection with surface water, Oklahoma applies the prior appropriation doctrine.

Another phase of the water policy of Oklahoma is the so-called "conservancy districts", which may be organized by district courts upon receipt of petitions signed by fifty-one per cent of the landowners of the proposed district. The districts have for their purposes such matters as prevention of floods, regulating stream channel, reclamation, irrigation, etc. They promote and finance various improvement projects to carry out their purposes.

A statutory system is provided also to organize water distribution systems for the purpose of supplying water for domestic use.

Each county is authorized to organize a water improvement district for the purpose of improving the water supply and distributing water to users.

Oklahoma has two water authorities, the Grand River Dam Authority and the Fairfax-Kaw City Authority.

Oklahoma does not have a broad pollution law. The only statutes on the subject merely make it unlawful to pollute any waters used by an incorporated city or town as a municipal water supply. The Oklahoma Ground Water Law provides that the Oklahoma Planning and Resources Board must require the applicant for a license to appropriate water from a sweet water basin lying beneath a strata of water impregnated with minerals, to contract that he will take all necessary precautions to protect the sweet water basin from intrusion by the polluted water.

Oklahoma provides an elaborate statutory system for the organization, upon the petition of a group of citizens, financing by bond issues and taxation, and operation by a board of directors, of irrigation districts which distribute the available water from the various streams or water systems. The provisions of the law are similar to those of Louisiana.

The policy of the State of Oklahoma is to conserve the water resources, and, to implement this policy, it has established an "Oklahoma Planning and Resources Board" which administers the various statutes dealing with the useful appropriation of water resources. The Board has very broad powers, including (1) supervision and control of waterways created, improved, or maintained by public funds; (2) prescription of rules and regulations for orderly conduct of its business; (3) investigation of methods of flood control; (4) cooperation with other governmental agencies; (5) negotiation of contracts with the Federal government or other states designed to promote water conservation; (6) determination of proposed water improvement and conservancy districts; and (7) supervision and promotion of water power within the state. Detailed authorization and methods of procedure for the Board are provided in the state statutes.

Oklahoma provides another elaborate statutory system for construction and control of drains and ditches. County commissioners direct the system for rural areas, while city officials are responsible for its utilization in incorporated municipalities. Bond issues, taxes, and assessment of property benefited provide a financial basis for construction work.

Included in the Oklahoma laws dealing with conservation is the interstate agreement known as the Canadian River Compact, which also includes the states of Texas and New Mexico.

A bill will be introduced, during the next session of the legislature, which would set up a state-wide Water Resources Authority as a semi-independent government corporation with authority to issue self-liquidating revenue bonds.

Another bill would require the plugging of core and seismograph holes within 10 days after the hole is no longer needed for the purpose for which it was drilled.

Several minor changes will be suggested for the existing Oklahoma Ground Water Law. The changes will not affect the essence of the law, but will merely help to clarify it.

Sept. 1955 Issue, Journal, American Water Works Association

After abandoning hopes that the 1955 Oklahoma legislature would create a new statewide water authority empowered to issue self-liquidating revenue bonds to finance new supplies, Governor Gary urged the lawmakers to set up a study committee to work out a plan for water development legislation in two years.

A new law provides for a change in the state constitution if the voters will approve. If they do, cities and towns will be able to join together in establishing water supplies and distribution systems. Municipalities will also be able to make contracts for a period of 25 years, or less, to purchase water, which would be paid from revenue. At present, contracts affecting revenue are limited to the current fiscal year.

A bill designed to permit incorporated areas to finance needed water facilities from revenue was not approved by the legislature. Water utilities in Oklahoma must be operated and maintained from revenue, because cities obtain practically no funds from ad valorem taxes. Capital investments, however, are generally financed from general obligation bonds.

Reports on Water Resources, The Council of State Governments, October 1955 BX-298

"Long Range Water Program", Report to the Governor and Legislature by the State-Wide Engineering Committee, December 1954, recommends creation of a State-wide water authority with power to issue revenue bonds to pay the cost of facilities and to cooperate and contract with the federal government, state agencies, local agencies, and corporations and individuals; provision, to meet future needs, of as much space in existing and proposed federally-built reservoirs as is economically feasible; passage of enabling legislation in Congress for inter-state compacts; supervision of water storage structures to assure highest possible beneficial use; and requirement of the fullest possible cooperation between state agencies in the control of pollution.

SCS-TP-126, October 1955, Soil Conservation Service, U. S. Department of Agriculture

House Joint Resolution No. 520, Twenty-fifth Oklahoma Legislature, creates a committee on water problems to consist of 12 members of the state legislature and 14 citizens of the State; provides that the duties of the committee shall be to study, analyze and report upon the existing situation regarding water and its use for all purposes within the State, and to make recommendations and prepare proposed legislation for submission to the twenty-sixth Oklahoma legislature; and authorizes and directs State agencies to cooperate with the committee.

State Water Legislation, 1955, The Council of State Governments, BX-299, December 1955

House Bill 613 enlarges the powers of soil conservation districts. . .

House Bill 650 authorizes soil conservation districts to act under the provisions of the federal Watershed Protection and Flood Prevention Act of 1954, and to carry out, maintain, and operate works of improvement . . .

House Bill 986 forbids pollution ofthe waters of the State . . .

Senate Bill 308 enlarges the powers of conservancy districts. In addition to the powers already possessed, the districts now may engage in

activities to develop water supply facilities for domestic, industrial, and agricultural purposes, including the construction and operation of storage, distribution, treatment, and supply installations and facilities . . .

Senate Bill 370 authorizes counties, singly or jointly, with any other counties or municipalities or with the Federal Government, to acquire, construct, and operate water distribution systems. . .

Senate Joint Resolution 3 proposes a constitutional amendment, authorizing cities to enter into contracts with each other, the state, or the federal government for the development of water supply facilities. Municipalities are permitted to increase their bonded indebtedness for this purpose and to pledge future revenue for retirement of bonds. The amendment will be submitted to the electorate for ratification.

OREGON

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

The common-law doctrine of riparian rights has been virtually abrogated in Oregon and for practical purposes appears to be no longer more than a legal fiction.

The constitution contains no provisions concerning water other than the control and development of water power. The statutes provide in general:

"All water within the state from all sources of water supply belong to the public."

"Subject to existing rights, all waters within the state may be appropriated for beneficial use, as herein provided, and not otherwise; but nothing herein contained shall be so construed as to take away or impair the vested right of any person, firm, corporation, or association to any water; . . ."

Certain designated streams and a section of the Columbia River are exempted from appropriation in order to preserve the natural flow for scenic and other purposes. Special provisions relate to the appropriation of ground waters of certain character in the portions of the state lying east of the summit of the Cascade Mountains. Another statute concerns the utilization of waste, spring, or seepage waters.

Sept. 1955 Issue, Journal, American Water Works Association, page 856

A recently enacted law has established a Water Resources Board, which replaces five or six other bodies whose functions overlapped. This organization has been directed to prepare as rapidly as possible an integrated and coordinated water policy, to which all other public agencies will be required to conform, specifically including those of the federal government.

The Ground Water Act of 1955, which declares that all Oregon waters belong to the state, was primarily designed for control of the ground water basins. The State engineer is empowered to maintain reasonable levels in all the ground water basins, and he is permitted to make the final determination of extraction rights.

Reports on Water Resources, The Council of State Governments, October 1955 BX-298

"Report of Water Resources Committee", January 1955, recommends (1) establishment of a Water Resources Board to carry out a state-wide coordinated plan and policy for the development and conservation of water resources, including power to control uses in conflict with that plan and to enter into agreements with federal agencies, and to review, modify, or set aside any order of any other State agency in conflict with the plan; (2) enactment of a state-wide ground water code, based on registered and adjudicated appropriations governed by beneficial use; and (3) provision for the licensing of well drillers and the control of location, depth and construction of wells.

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

House Bill No. 636 establishes procedures for the cancellation of abandoned water rights. An owner of a perfected and developed water right may certify that the water right has been abandoned by him. The water then reverts to the public and becomes again the subject of appropriation. The State Engineer may initiate proceedings for the cancellation of any perfected and developed water right that has been abandoned as provided in the statute.

PENNSYLVANIA

Administrative Code of 1929 as amended effective January 18, 1952

The Water and Power Resources Board shall consist of five members, four of whom shall be the Secretary of Forests and Waters, the Secretary of Health, the Executive Director of the Pennsylvania Fish Commission, and a member of the Pennsylvania Fish Commission, to be designated by the Governor. The fifth member shall be an engineer. The Secretary of Forests and Waters shall be Chairman of the Board.

The Board is authorized to prepare and publish rules and regulations, defining the procedure to be followed in all matters pertaining to or coming within its powers or authority.

It shall be the duty of the Board to consider and pass upon the validity of the claims of the public water supply agencies making claim to prior acquisitions of water rights, and to notify the claimants of its findings.

It shall also be the duty of the board to prepare and keep up to date a public record of all confirmed water right acquisitions, and of all permits for the acquisition of water rights, classified and indexed as the board may direct, and containing such detailed information as may be available to the board and which it shall determine should be recorded, which said public record shall be known as "Water Acquisition Record".

Hereafter, no acquisition of water rights shall be made or taken by any public water supply agency except as follows:

Any such water supply agency desiring to acquire new water rights, a new source of water supply, or to acquire an additional quantity of water or water rights from an existing source of water supply, beyond that confirmed by the board as being reasonably necessary for present purposes and future needs, shall make application to the board for a permit to acquire such designated waters or water rights, setting forth such of the following information as may be applicable: (1) The river or stream from which the supply is proposed to be taken and the necessity for such new water rights, new source

or additional quantity, (2) The amount of water which it is proposed to acquire for present purposes and future needs, (3) The district, municipality or political subdivision, and the population thereof, requiring the supply, and the necessity for such acquisition, (4) The plan for development of use of the water, including the capacities of any proposed impounding reservoirs, and (5) such other or additional applicable information as the board may require.

It shall be the duty of the board, upon receipt of an application, to make such investigation as may be necessary, including a search of the water acquisition record to determine whether the approval of the application will affect water rights theretofore confirmed or approved, or water rights at that time the subject of application to the board, or water rights for the acquisition of which a permit shall theretofore have been issued. In case of apparent conflict of interests, the investigation shall include and consider the extent of the conservation, development and use to the best advantage of existing sources or water supply. In case of established conflict of interests, the board, after receipt of an application or at any time or from time to time, shall have the power to issue, modify or impose conditions, in permits or confirmed claims for, or to the acquisition of, water rights theretofore or thereupon issued, when deemed necessary by the board in the public interest, and it shall be the duty of the board to issue and it shall issue all such permits and modifications and conditioning orders as the public interest shall require.

However, if the board finds that the proposed new source or additional supply will not conflict with the rights to such water or to water rights held by any other public water supply agency which are reasonably necessary for its present purposes or future needs, and that the water or the water rights proposed to be acquired are reasonably necessary for the present purposes and future needs of the public water supply agency making application, and that the taking of said water rights will not interfere with navigation, jeopardize public safety, or cause substantial injury to the Commonwealth, then, and in that case, the board shall approve the application and shall issue a permit therefor.

The board shall have the further power to revoke any permit granted under the terms of this act in case the water rights are not acquired within one year after the issuance of said permit, and said acquisition shall be null and void and of no effect, to the extent required to make water and water rights from such source available for requisition under the terms of this act, if any actual taking of water be not made within four years after the issuance of such permit.

Any party or applicant, who may be directly or adversely affected by any decision or finding of the board under any of the provisions of this act, shall be entitled, upon application, to be heard in person or by counsel in a public hearing, on a reasonable notice to the board or its duly designated agent.

Any party, aggrieved by any decision of the board under any of the provisions of this act, may, within thirty days appeal therefrom to the court of common pleas of Dauphin County, and the taking of such appeal shall operate as a supersedeas.

From and after the passage of this act, it shall be unlawful for any person or persons, partnership, association, corporation, county, city, borough, town, or township to construct any dam or other water obstruction; or to make, or permit to be made, any change in or addition to any water obstruction; or

in any manner to change or diminish the course, current, or cross section of any stream or body of water, wholly or partly within, or forming a part of the boundary of, this Commonwealth, except the tidal water of the Delaware River and of its navigable tributaries, without the consent or permit of the Water and Power Resources Board, in writing, previously obtained upon written application to said board therefor.

If the board shall determine that any dam or other water obstruction is unsafe or needs repair, alteration or change in its structure or location, or should be removed as being unsafe and not susceptible of repair, or for any reason is derogatory to the regimen of the stream, the board shall, in writing, notify the owner or owners thereof to repair, alter, change its structure or location, or remove the same, as the exigencies of the case may require.

If said owner or owners, notified as aforesaid, shall neglect or refuse to make such repairs, alterations, change or changes in structure or location or cause such removal, or if said owner or owners cannot be found or determined, then the Board may make such repairs, alterations, change or changes in structure or location or cause such removal; and the board may thereafter recover, in the name of the Commonwealth, from the owner or owners the said cost or expense, in the same manner as debts are now by law recoverable.

The provisions of this act shall not prohibit the placing in any purely private stream, having a drainage of less than one-half square mile, of any dam or obstruction that cannot in any way imperil life or property located below or above such dam or obstruction; nor shall the provisions of this act prohibit the making of necessary temporary repairs to any water obstruction.

Nothing in this act contained shall be construed to repeal in any way, or in any way alter or abridge, any powers or authority vested by law in the Department of Health, the Department of Wharves, Docks, and Ferries, or the Board of Commissioners of Navigation of the Delaware River and its navigable tributaries.

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Pennsylvania is a member of the Delaware River Basin Water Commission Compact. Pennsylvania is also a member of a reciprocal agreement concerning control of pollution in the waters of the Delaware River Basin. (See "Delaware" herein.)

Pennsylvania is also a member of the Potomac Valley Conservancy District. (See "Maryland" herein.)

Sept. 1955 Issue, Journal, American Water Works Association

The Pennsylvania legislature introduced a bill that would authorize a municipality to operate, control, sell, and lease facilities for the production, transmission, and furnishing of gas, electricity, steam, water, or sewage within or without municipal limits. Perhaps the most significant proposed act was one that would authorize joining New Jersey in permitting the construction (within 50 years) of a dam at Wallpack Bend on the Delaware River to provide a water supply for both states. As of May 1955, the bill had passed the Assembly, but not the Senate. When such action was not completed by July 1, 1955, the compact between the two states regarding the dam automatically expired.

RHODE ISLAND

Reports on Water Resources, The Council of State Governments, October 1955, EX-298

"A Water Resources Program for Rhode Island", Water Resources Memorandum Number Three, Rhode Island Development Council, Planning Division, February 1954, recommends (1) supplementation of the existing five year water survey program with quantity and quality tests, (2) continuation of pollution abatement program, facilitating municipal action thereon, (3) enactment of a ground water code to assure the use of ground water in the best interests of the economic development of the State, (4) protection of surface reservoir sites as highway, industrial and urban development takes place, and (5) undertaking of a shore-front development plan.

The purpose of the report is to provide an immediate program for water resources development and a guide to further water resources studies. It is based on two earlier surveys of surface water and ground water resources. It outlines the elements to be considered in developing a program: water sources; trends in use of water, and domestic and industrial demand; the major problems of adequate ground water supplies, pollution, distribution systems, and sewerage; and future water needs and supply.

State Water Legislation, 1955, The Council of State Governments, EX-299, December 1955

Chapter 3562 creates the Water Resources Coordinating Board. The seven members of the Board are to be appointed by the Governor. Duties of the Board will include (1) the review of current studies and programs of state agencies pertaining to the conservation and development of water resources, (2) advising local authorities in the formulation of municipal water resources programs, with a view to coordinating all local plans, (3) the review and evaluation of ground water investigations presently being carried on by State agencies; and (4) the formulation of a long-range plan pertaining to the conservation and use of ground water, and working with state and local officials in devising plans for the distribution of water supplies for the state.

SOUTH CAROLINA

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

At present, South Carolina is operating under the riparian doctrine. There are no unusual deviations therefrom.

The Water Pollution Control Authority is the administrative agent for the general pollution law of South Carolina. The law deals with ground and surface waters including the Atlantic Ocean within the territorial limits of the state. The Authority may adopt rules to implement the law, which is substantially the same as that of Louisiana.

No South Carolina laws on irrigation were found. However, the demands for water for irrigation are rapidly increasing in the State.

No statutes dealing directly with water conservation were found; however, South Carolina has an extensive soil conservation program similar to that of Georgia.

The drainage laws in South Carolina are similar to the ones in Louisiana.

South Carolina has entered no interstate compacts in connection with water problems.

In 1953, the General Assembly of South Carolina appointed a committee to study the water policy of the State. The committee completed its report and prepared a bill concerning surface water which was presented to the General Assembly in January of 1955. The bill provides that all surface waters, except insofar as it has been and is being applied to useful and beneficial purposes, are public waters and are subject to appropriation, and that under its police power the State shall have the right to control and develop the use of water for all beneficial purposes, provided that no person shall be deprived of any vested right in the use of water. The bill is now in committee and will be held there until the January 1956 session.

Sept. 1955 Issue, Journal, American Water Works Association

A competent authority has stated that South Carolina has been more active than any of the other South Atlantic States. The proposed North Carolina legislation is identical in its statement of policy with the policy of South Carolina.

A study of water policy was initiated by the 1953 Assembly, when the Senate, the House, and the Governor appointed a joint committee, which did a fine job of assembling and weighing the facts. It recommended a new water policy for South Carolina and suggested to the 1954 Assembly legislation that would guarantee existing vested rights to surface water that is being used for beneficial purposes. This bill provides for an orderly, legal way in which additional uses could develop. An antiquated doctrine would have yielded to one based on a realistic approach to present and future water use, but the act was not passed. An amended bill was introduced in the 1955 General Assembly. Further effort was apparently made to clarify the meaning and extent of "vested right". According to recent reports, this legislation is tied up in the Senate Agricultural Committee with no chance of being released during the present session.

C. P. Guess, Jr. discusses the philosophy and the problems of the proposed new water policy in a paper on p. 840 in this issue.

SOUTH DAKOTA

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

The riparian doctrine has been recognized in South Dakota in many court decisions, together with the appropriation doctrine.

The state constitution contains no provisions concerning water rights, other than to declare that the irrigation of arid lands is a public purpose and to authorize legislation for the organization of irrigation districts. The water statutes, as amended by the 1939 Code, provide as follows:

"Subject to vested private rights, and except as hereinafter specifically provided, all the waters within the limits of this State, from whatever source of supply, belong to the public and, except navigable waters, are subject to appropriation for beneficial use. Subject to the provisions of this Code relating to artesian wells and water, the owner of the land owns water standing thereon, or flowing over or under its surface, but not forming a definite stream. Water running in a definite stream, formed by nature, over or under the surface, may be used by such landowner as long as it remains there;

but he may not prevent the natural flow of the stream, or of the natural spring from which it commences its definite course, or of a natural spring arising on his land which flows into and constitutes a part of the water supply of a natural stream, nor pursue nor pollute the same, except that any person owning land, through which any nonnavigable stream passes, may construct and maintain a dam across such unnavigable stream if the course of the water is not changed, vested rights are not interfered with, and no land flooded other than that belonging to the owner of such dam or upon which an easement for such purpose has been secured. Nothing in this section shall be construed to prevent the owner of land on which a natural spring arises, and which constitutes the source or part of the water supply of a definite stream, from acquiring a right to appropriate the flow from such spring in the manner provided by law for the appropriation of waters".

There is also a statute authorizing the appropriation and use, by the holders of agricultural lands, for irrigation or livestock purposes, of flood waters in any "dry draw" or watercourse, not having a flow of at least 20 miner's inches during the greater part of the year, by filing a location certificate in the county records, posting a copy, and sending a copy to the state engineer. These rights are not subject to the rules and regulations and under the jurisdiction of the state engineer, but a certificate covering such appropriation may be secured from him upon petition. Another statute relates to the appropriation of seepage water from constructed works.

A statute passed in 1935 vests the full control of all waters of definite streams, so far as they relate to "irrigation or other riparian rights", in the State engineer, whose duty it is to apportion the waters on request of five or more landowners having riparian rights. The exception of navigable waters from waters subject to appropriation is made by South Dakota and by no other Western State (a similar provision in the North Dakota law was eliminated by amendment in 1939). An important question then arises as to just what waters are navigable and therefore exempt from appropriation.

Reports on Water Resources, The Council of State Governments, October 1955, BX-298

"Report of the Committee on Agriculture and Conservation to the Executive Board", South Dakota Legislative Research Council, September 1954, recommends (1) enactment of a new surface water law, recognizing existing rights of riparian owners to all waters, needed and being used for domestic and other beneficial uses, and existing rights to appropriate, with future use to be by appropriation for beneficial use upon the granting of a permit; (2) creation of a Water Resources Committee to administer the law, with authority to review and make recommendations on all state and federal water projects; (3) enactment of a ground water law, based upon the doctrine of beneficial use but recognizing existing uses for beneficial and domestic purposes, with provisions for future additional uses by permit; (4) empowering the board of county commissioners (or a board of trustees) to order necessary repairs and restoration of drainage works; (5) permitting the annexation of additional lands upon petition; and (6) providing for a Board of Trustees for drainage districts to manage the districts.

Sept. 1955 Issue, Journal, American Water Works Association

South Dakota is very water conscious, having recently passed two bills revising the old water code. A Water Resources Commission consisting of seven members was created to control all water resources.

General domestic use - including all ordinary application around the home and farm, as well as irrigation of not more than ½ acre - has priority over other consumption. Municipal use, seemingly second in importance, does not include the irrigation of crops on a commercial scale within city limits or extensive recreational employment.

The legislation endeavors to control the vested rights of landowners in continuing the use of waters. These bills are of far-reaching importance, and South Dakota's control system could profitably be studied by other states.

State Water Legislation, 1955, The Council of State Governments, BX-299, December 1955

Chapter 430 (HB 514) creates a Water Resources Commission of seven members to be appointed by the Governor to administer the water laws of the state. The act declares that all water within the state is the property of the people and is to be put to beneficial use to the fullest possible extent. It ends the dual system of appropriation and riparian rights, which has existed in the state, and makes all unappropriated waters subject to appropriation. Also, water may be used for domestic purposes, including stock watering, without obtaining a permit from the Commission. Municipalities may appropriate water for their future needs, but the Commission may grant temporary permits to others to use such water in excess of immediate needs. The act also provides for the establishment of a Committee on Water Pollution. It is to conduct pollution control work and is directed to classify the waters of the state.

Chapter 431 (HB 515) concerns the ground waters of the state and makes them subject to appropriation by the Water Resources Commission. It requires well diggers to obtain permits from the Commission and to keep records for the Commission. The Commission may control the location of wells and may order uncontrolled artesian wells to be plugged.

TENNESSEE

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Tennessee follows the riparian doctrine and has no important variations from the generally accepted provisions of the doctrine, except for the fact that it is one of the few states that has written laws concerning riparian rights.

Tennessee has a basic pollution law administered by the Tennessee Stream Pollution Control Board. The law is substantially the same as that of Louisiana, except that it applies only to surface water.

No Tennessee laws concerning irrigation were found.

No laws concerning water conservation were found; however, Tennessee has an extensive soil conservation program similar to that of Georgia.

The drainage laws of Tennessee are similar to those of Louisiana.

Tennessee, Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, and West Virginia are members of the Ohio River Valley Sanitation Compact, the purpose of which is to control pollution in the waters of the Ohio River Basin.

It has been reported that, in recent years, a critical water shortage has developed in some areas of the State. The Tennessee State Planning Commission, the Commissioner of Conservation, and the State Geologist and others are aware of the need for an adequate water policy and are doing all within their power to encourage the 1955 legislature to make adequate provisions for a thorough study of the problem with a view to adopting final legislation on the matter in 1957. Definite information on future legislation, however, is not available.

Sept. 1955 Issue, Journal, American Water Works Association

A bill now before the Tennessee legislature would create a commission of nine members to conduct a study of state water laws, water resources, and water uses, as well as desirable and necessary changes to meet the future needs of the state. This group is to report its results and recommendations to the governor by September 1956. (Note: The information regarding Indiana, Kentucky, Ohio, Michigan, Illinois, Wisconsin, and Tennessee, contained on pages 850-852, Sept. 1955 Issue, Journal, American Water Works Association, was taken from a paper presented at the Annual Conference of the Association in Chicago on June 13, 1955 by C. H. Beckert, Director, Div. of Water Resources, State Dept. of Conservation, Indianapolis, Ind.)

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Chapter 82 (HB 149) establishes an interim Commission known as the Tennessee Water Resources Commission. It is composed of five ex-officio members, the Commissioners of Conservation, Agriculture, and Public Health and the Directors of the Planning Commission and the Industrial and Agricultural Commission, and four public members appointed by the Governor. The Commission is to study the State's water laws, water resources, and water uses, and to recommend modifications necessary to provide for the future water needs of the State. Its report is due in September, 1956. The legislature appropriated $25,000 for the work of the Commission.

Chapter 151 ratifies the Tennessee River Basin Water Pollution Control Compact. Other states which may become parties to this compact are Alabama, Georgia, Kentucky, Mississippi, North Carolina and Virginia.

Public Chapter 112 (HB 708) provides for the organization of watershed districts; . . . and provides that districts may exercise the powers and receive the benefits relating to watershed districts prescribed in Public Law 566.

Public Chapter 132 (HB 614) grants to soil conservation districts the additional power to carry out, maintain, and operate works of improvement for flood prevention and agricultural phases of the conservation, development, utilization, and disposal of water.

TEXAS

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

Riparian rights are recognized in Texas as applicable to the ordinary flow and underflow of streams on grants of land made prior to the enactment of the general appropriation statute of 1889, the appropriation act of 1889 and the subsequent water legislation down to and including the act of 1917

being held valid and constitutional insofar as they authorize the appropriation of storm and flood waters and other waters without violation of the paramount preexisting riparian rights. The Supreme court has also held that the appropriation statute has no application to diffused surface waters on lands granted prior to its enactment.

The State constitution contains the following sections:

"The conservation and development of all the natural resources of this State, including the control, storage, preservation and distribution, of its storm and flood waters and the waters of its rivers and streams, for irrigation, power and all other useful purposes; the reclamation and drainage of its overflowed lands, and other lands needing drainage; the conservation and development of its forests, water and hydroelectric power; the navigation of its inland and coastal waters; and the preservation and conservation of all such natural resources of the State are each and all hereby declared public rights and duties; and the Legislature shall pass all such laws as may be appropriate thereto."

The appropriation statute provides:

"The waters of the ordinary flow and underflow and tides of every flowing river or natural stream, of all lakes, bays or arms of the Gulf of Mexico, and the storm, flood or rain waters of every river or natural stream, canyon, ravine, depression or watershed, within the State of Texas, are hereby declared to be the property of the State, and the right to use thereof may be acquired by appropriation in the manner and for the uses and purposes hereinafter provided, and may be taken or diverted from its natural channel for any of the purposes expressed in this chapter. . . "

The present legislation extends the right of appropriation to the entire state, whereas the 1889 and 1895 acts referred only to the arid portions of the state to which irrigation was necessary.

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Because of the geographical variations in the extent and character of water resources and uses, water problems of different sections of Texas have some rather unique aspects. The multitude of problems facing the state has not been eased, but appears to have been intensified, by water legislation. The General Irrigation Law of 1917, which is said to have " . . . postponed development of intelligent state-wide water laws for at least forty years", and some legislative patchwork constitute the present water law of the State.

Texas has three separate systems of water rights which are related to ground water, diffused surface water, and water in watercourses (surface water). (Diffused surface water has been defined as "water occurring naturally on the surface of the ground, other than in natural channels, streams, lakes, or other natural water courses".) Ground water is regulated in Texas by underground water conservation districts, and it belongs to the person who can withdraw it from a well on his own land and utilize it without waste. Diffused surface water belongs to the person on whose land it is found. Rights to surface water are determined by the riparian rights and prior appropriation doctrines. Through a "queer admixture of provisions" Texas has attempted to retain riparianism and yet adopt a policy of limited appropriation. The statutes declare that water in its natural status is the property of the state and is subject to appropriation under processes administered by the Board of Water Engineers. However, the statutes expressly provide that

riparian rights shall not be affected; and the courts have declared riparian rights superior to appropriation rights. Riaprian rights were declared to exist in the relation to the normal and ordinary flow of a stream but not to flood waters.

Appropriation of water in Texas is through a process of application, hearing, and determination by the Board of Water Engineers, whose duty it is to approve applications ". . . if the proposed appropriation comtemplates the application of water to any of the uses and purposes provided for in this chapter, and does not impair existing water rights or vested riparian rights, and is not detrimental to the public welfare".

In addition to the general provisions in the statutes of Texas for the regulation of water rights, there are special provisions establishing and regulating various types of water districts, including water improvement districts, water control and preservation districts, water supply districts, levee improvement districts, drainage districts, conservation and reclamation districts, navigation districts, and underground water conservation districts.

To implement the declared policy of the state for conservation of its water supply, the legislature of Texas has created a Water Pollution Advisory Council, composed of several state officials and authorized to cooperate, consult, and advise with other agencies and groups. The council is also directed to encourage and conduct studies of the pollution problem. The law, however, does not give the council authority to control pollution.

The 59 water improvement districts are empowered to obtain and distribute water for irrigation and other purposes. The 44 conservation districts have been created for the purpose of achieving flood control, water supply, drainage, soil conservation, and development and distribution of hydro-electric power.

Drainage and flood control is administered by drainage districts and conservation and reclamation districts.

Texas is a member of the Rio Grande Compact, the Pecos River Compact, and the Canadian River Compact. Texas is engaged in negotiations with Louisiana in connection with developing hydroelectric power on the Sabine River.

According to information available, Texas does not presently contemplate any major changes in its water policy.

Sept. 1955 Issue, Journal, American Water Works Association, page 855

A series of water conservation proposals, drafted by an interim study committee and backed by Governor Shivers, were introduced in the Texas legislature. A proposed state constitutional amendment, authorizing a $100,000,000 bond issue for state aid of up to 33 per cent to local water conservation projects, was passed by the Texas Senate and sent to the House. Under this plan, which would be referred to the electorate on Sept. 20, a state property tax of 3 cents on each $100 of assessed value could be levied to finance the program.

Other legislative developments included the enactment of two laws aimed at aiding water conservation. One requires water districts to register their boundaries with the State Board of Water Engineers, and the other requires this board to conduct hearings before granting approval of water projects involving federal aid.

State Water Legislation 1955, The Council of State Governments, EX-299 December 1955

House Bill 11 provides that proposed federal projects for water storage, flood control, or drainage shall be submitted to the Board of Water Engineers for study as to their feasibility . . .

House Bill 27 requires every water district to file with the Board of Water Engineers a certified copy of the act or order creating it. Districts also must file lists of their officers periodically.

House Bill 41 requires anyone using surface water from a natural stream to file with the Board of Water Engineers a statement concerning such information as the Board desires which will aid in the administration of the water laws of the state and the inventorying of water resources. Persons using domestic water are exempt from this requirement.

House Bill 20 creates the Trinity River Authority of Texas; . . .

Senate Bill 384 creates the York's Creek Improvement District, and House Bill 389 creates the Atacoosa and Frio Counties Improvement District No. 1 . . .

UTAH

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

Riparian rights have never been recognized in Utah. In 1936, the Utah supreme court stated that its uniform holding had been not to recognize the doctrine of riparian rights.

The state constitution provides:

"All existing rights to the use of any of the waters in this State for any useful or beneficial purpose are hereby recognized and confirmed."

The statutes provide:

"All waters in this state, whether above or under the ground, are hereby declared to be the property of the public, subject to all existing rights to the use thereof."

The Utah water code provides complete procedure for the appropriation and distribution of water under the supervision of the state engineer, and for adjudications by the courts in which the state engineer makes proposed determinations.

State Water Legislation, 1955, The Council of State Governments, EX-299 December 1955

Senate Joint Resolution No. 18, assigning studies to the Legislative Council, includes two sections relating to water.

Section 3 - The Council is to study the need for, and desirability of, revision and extension of state laws dealing with the control and management of underground water. It also is to study the desirability of the state

accepting the responsibility for controlling its water in flood stages.

Section 7 - The Council is directed to study the advisability of consolidating all state agencies dealing with the development and distribution of water and the determination of water rights.

The legislature ratified the Columbia River Basin Compact. . .

The legislature ratified the Bear River Compact. . .

VERMONT

SCS-TP-126, Soil Conservation Service, U. S. Department of Agriculture

Public Act No. 234, Vermont Acts of 1955 (H. 384), empowers soil conservation districts to act as local sponsoring agencies under Public Law 566 for carrying out programs for flood control, stream-bank protection, channel improvement, land treatment, and drainage; empowers the State Water Conservation Board, with the approval of the Governor, to construct, operate, and maintain dams for flood control and structures for streambank protection or improvement of stream channels and to render technical assistance to local organizations under the provisions of Public Law 566; and appropriates $10,000 for the biennium for such purposes.

VIRGINIA

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

Virginia has always followed the riparian doctrine in connection with its laws on water rights. However, the Virginia Legislature, early in 1954, adopted a surface water policy which declared that all surface waters are a natural resource of the state and that "the public welfare and interest of the people of the State requires the proper development, wise use, conservation, and protection of water resources, together with protection of land resources, as affected thereby". The act also declared that, under its police power, the state could control the development and use of waters "for all beneficial purposes". Finally, the act directed the Virginia Advisory Legislative Council to "make a study and report . . . upon the further establishment of the water policy of the State, together with drafts of legislation for placing the same into operation as between classes of users and within classes of users". The Council's report is to be made to the 1955 session of the legislature.

Virginia's basic pollution law was adopted in 1946 and is administered by the State Water Control Board consisting of five members appointed by the governor. The board has been granted general supervision over rules and orders established for the regulation of pollution of surface and underground waters. The board is also authorized to study and investigate pollution; to establish standards of quality for waters and policies relating to existing or proposed future pollution; to issue certificates for the discharge of sewerage, industrial, and other wastes into waters (conditions may be prescribed and the certificates revoked or amended); to issue special orders directing owners to secure reasonable operating results toward control of pollution, within a specified time; and to investigate large-scale killing of fish resulting from pollution, and institute civil suits in behalf of the state for damages.

The law requires owners of existing establishments, establishments

that are being expanded, and new establishments to obtain a certificate from the board if the establishments are likely to cause pollution. Such establishments must furnish plans or information to the board when requested to do so and comply with the regulations of the board.

In 1954, Virginia supplemented its pollution laws with a statute that provides for a tax deduction for plants or equipment installed to prevent or reduce pollution, provided the installation was made pursuant to an order or with the consent of the board.

No Virginia laws concerning irrigation were found.

Virginia law deals extensively with the conservation of water which may be used for hydro-electric energy. The Director of Conservation and Development is authorized to make a water power survey of the state which would include the possibilities of obtaining maximum power by water storage and conservation. Plans for dams and works for water-power development must be approved by the State, and a license to build must be granted by the State Corporation Commissio No priority of location or appropriation is considered by the commission in granting licenses except for the expansion of an existing development when another development would materially affect the existing development.

The drainage laws of Virginia are similar to the gravity drainage laws of Louisiana.

Virginia has created two commissions, the Potomac River Basin Commission and the Ohio River Valley Sanitation Commission, and has authorized them to enter into compacts with certain other states for the purpose of cooperating in the study for causes of pollution of interstate waters and to propose legislation and regulations to prevent pollution. Virginia is a member of the Potomac Valley Conservancy District (See "Maryland") and a member of the Ohio River Valley Sanitation Compact (See "Tennessee").

Information concerning Virginia's immediate plans for water legislation is not available. However, studies are presently being conducted by the Virginia Geological Division which may result in future legislation. That division is making an examination of the streams and water powers of the state with special reference to their development for manufacturing enterprises and a separate examination of the water supplies of the state with special reference to the sinking of deep or artesian wells.

Sept. 1955 Issue, Journal, American Water Works Association

Analysis of available material shows that Virginia has been active in the field of water resources legislation in recent years. In 1953, Governor Battle directed the Virginia Advisory Legislative Council to study and report on the problem to the Governor and the General Assembly. The council was to provide appropriate suggestions for the establishment of a state comprehensive water code, designed to facilitate present and future economic development along sound and constructive lines.

The final recommendations specifically covered definition of terms for clarity, creation of a water conservation board, and establishment of a set of administrative and judicial procedures. A bill introduced in the 1954 Assembly directed that the Virginia Advisory Legislative Council act accordingly and report to the 1956 Assembly.

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

Although the riparian and appropriation doctrines are both recognized in Washington, the superiority of the common-law riparian right has been reduced substantially as a result of the court decisions. The exercise of vested riparian rights, on a basis of beneficial use, is protected by the courts; but generally speaking, the doctrine of appropriation is much the more important in the exercise and administration of water rights in the State.

The State constitution provides:

"The use of the waters of this State for irrigation, mining, and manufacturing purposes shall be deemed a public use."

The statutes provide:

"The power of the State to regulate and control the waters within the State shall be exercised as hereinafter in this act provided. Subject to existing rights all waters within the State belong to the public, and any right thereto, or to the use thereof, shall be hereafter acquired only by appropriation for a beneficial use and in the manner provided and not otherwise; and, as between appropriations, the first in time shall be the first in right. Nothing contained in this act shall be construed to lessen, enlarge, or modify the existing rights of any riparian owner, or any existing right acquired by appropriation, or otherwise. . . ."

Water Code Relating to the Regulation and Control of Waters within the State and Rights to the Use Thereof - Laws of 1917, as amended to May, 1945

Subject to existing rights, all waters within the State belong to the public, and any right thereto, or the use thereof, shall be hereafter (subsequent to 1917) acquired only by appropriation for a beneficial use and in the manner provided and not otherwise; and, as between appropriations, the first in time shall be the first in right. Nothing contained in this act shall be construed to lessen, enlarge or modify the existing rights of any riparian owner, or any existing rights of any riparian owner, or any existing right acquired by appropriation, or otherwise.

The administration of this act is imposed upon an engineer to be known as the State Supervisor of Hydraulics, appointed by the Governor, who, at the time of his appointment, shall be a technically qualified and experienced civil and hydraulic engineer in the practice of his profession. He shall, unless sooner removed by the Governor for inefficiency, neglect of duty or misconduct in office, hold office for a term of six years or until his successor shall be appointed and shall have qualified.

There is hereby imposed upon the State Supervisor of Hydraulics the following duties and powers:

1. The supervision of public waters within the State and their appropriation, diversion and use, and of the various officers connected therewith.

2. Insofar as may be necessary to assure safety to life or property,

he shall inspect the construction of all dams, canals, ditches, irrigation systems, hydraulic power plants, and all other works, systems and plants pertaining to the use of water, and he may require such necessary changes in the construction or maintenance of said works, to be made from time to time, as will reasonably secure safety to life and property.

3. He shall regulate and control the diversion of waters in accordance with the rights thereto.

4. He shall determine the discharge of streams and springs and other sources of water supply and the capacities of lakes and reservoirs whose waters are being or may be used for beneficial purposes.

5. He shall keep such records as may be necessary in the administration of his department and for the recording of the financial transactions and statistical data of his department, and shall procure all necessary documents, forms, and blanks.

6. He shall render to the Governor, on or before the last day of November immediately preceding the regular session of the legislature, and at other times when required by the Governor, a full written report of the work of his office, including a detailed statement of the expenditures thereof, with such recommendations for legislation as he may deem advisable for the better control and development of the water resources of the state.

7. He shall establish and promulgate rules governing the administration of this act.

Water masters shall be appointed by the State Supervisor of Hydraulics upon application of interested parties making a reasonable showing of the necessity therefor, at such time, for such districts, and for such periods of service, as local conditions may indicate to be necessary to provide the most practical supervision on the part of the State and to secure to water users and owners the best protection in their rights. The districts for or in which the water masters serve shall be designated water districts, which shall be fixed from time to time by the State Supervisor of Hydraulics, as required, and they shall be subject to revision as to boundaries or to complete abandonment as local conditions may indicate to be expedient, the spirit of this provision being that no districts need be created or maintained or water masters appointed therefor, where the need for the same does not exist. Water masters shall be under the supervision of the State Supervisor of Hydraulics, and shall be technically qualified to the extent of understanding the elementary principles of hydraulics and irrigation, and of being able to make water measurements in streams and in open and closed conduits of all characters, by the usual methods employed for that purpose.

It shall be the duty of the water master, acting under the direction of the State Supervisor of Hydraulics, to divide, in whole or in part, the water supply of his district among the several water conduits and reservoirs using said supply, according to the right and priority of each, respectively. He shall, as near as may be, divide, regulate and control the use of water within his district by such closure or partial closure of headgates as will prevent its use in excess of the amount to which the owner of the right is lawfully entitled. He shall, as may be required in times of scarcity of water and in respect of priorities or rights, shut and fasten or cause to be shut and fastened the headgates of water conduits, and shall regulate or cause to be regulated the controlling works of reservoirs.

Any person, corporation or association feeling aggrieved at any order or decision of the State Supervisor of Hydraulics, or of any assistant or deputy, or any water master, affecting his interests, may have the same reviewed by a proceeding for that purpose, in the nature of an appeal, initiated in the superior court of the county in which the matter affected, or a portion thereof, is situated. Costs shall be paid as in civil cases brought in the superior court, and the practices in civil cases shall apply. Appeal shall lie from the judgment of the court as in other civil cases.

Where water rights of a stream have been adjudicated, a stream patrolman shall be appointed by the State Supervisor of Hydraulics upon application of interested parties making a reasonable showing of the necessity therefor, which application shall have been approved by the District Water Master if one has been appointed, at such time, for such stream, and for such periods of service as local condtiions may be indicated to provide the most practical supervision and to secure to water users and owners the best protection in their rights. The stream patrolman shall have the same powers as a watermaster, but his district shall be confined to the regulation of waters of a designated stream or streams. The salary of the stream patrolman shall be borne by the water users receiving the benefits.

Upon the filing of a petition with the State Supervisor of Hydraulics by one or more persons claiming the right to divert any waters within the state, or when, after investigation, in the judgment of the State Supervisor of Hydraulics, the interest of the public will be subserved by a determination of the rights thereto, it shall be the duty of the State Supervisor of Hydraulics to prepare a statement of the facts, together with a plan or map of the locality under investigation, and file such statement and plan or map in the superior court of the county in which such water is situated, or, in case such water flows or is situated in more than one county, in the county in which the State Supervisor of Hydraulics shall determine to be the most convenient to the parties interested therein. The court shall enter a decree determining the rights of the parties. Costs may be allowed or not; if allowed, may be apportioned among the parties in the discretion of the court. Appeal may be taken to the supreme court from such decree in the same manner as in other cases in equity.

Upon the final determination of the rights to the diversion of water, it shall be the duty of the State Supervisor of Hydraulics to issue to each person, entitled to the diversion of water by such determination, a certificate setting forth the name and postoffice address of such person; the priority and purpose of the right; the period during which such right may be exercised; the point of diversion and the place of use; the land to which said water right is appurtenant; and, when applicable, the maximum quantity of water allowed.

Any person, municipal corporation, firm, irrigation district, association, corporation or water users' association, hereafter desiring to appropriate water for a beneficial use, shall make an application to the State Supervisor of Hydraulics for a permit to make such appropriation, and shall not use or divert such waters until he has received a permit from such State Supervisor of Hydraulics.

The State Supervisor of Hydraulics shall make, and file as part of the record in the matter, written findings of fact concerning all things investigated, and, if he shall find that there is water available for appropriation for a beneficial use, and the appropriation thereof as proposed in the application will not impair existing rights or be detrimental to the public welfare, he shall issue a permit stating the amount of water to which

the applicant shall be entitled and the beneficial use or uses to which it may be applied: Provided, that, where the water applied for is to be used for irrigation purposes, it shall become appurtenant only to such land as may be reclaimed thereby to the full extent of the soil for agricultural purposes. The right acquired by appropriation shall relate back to the date of filing of the original application in the office of the State Supervisor of Hydraulics.

Any person, corporation or association, intending to construct any dam or controlling works for the storage of ten acre-feet or more of water, shall, before beginning said construction, submit plans and specifications of the same to the State Supervisor of Hydraulics for his examination and approval as to its safety. No such dam or controlling works shall be constructed until the same or any modification thereof shall have been approved as to its safety by the State Supervisor of Hydraulics.

Sept. 1955 Issue, Journal, American Water Works Association, page 856

A number of water bills were presented to the Washington legislature, but they were not passed. The governor, however, appointed a Water Resources Committee, which has proposed a water policy for the State.

WEST VIRGINIA

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

West Virginia adheres to the riparian doctrine in connection with the appropriation of water, but, like many states, has no statutory law on the subject. There are, however, statutes concerning pollution, soil conservation districts, and drainage, levee, and reclamation districts.

The basic pollution law of West Virginia is administered by a State Water Commission, composed of the Commissioner of Health, the Chairman of the Game and Fish Commission, and three members appointed by the Governor. The College of Engineering, West Virginia University, and the Director of Sanitary Engineering are authorized to assist the Commission. The Commission has authority to study pollution problems, and may authorize the exercise of eminent domain for persons who need lands in order to control pollution. The Commission is also the water pollution agency for the State for purposes of the Federal Water Pollution Control Act.

Soil conservation districts may be established in West Virginia upon the petition of any 25 land owners. The law recognizes that the consequences of soil erosion are diminishing of underground water reserves, an intensification of periods of drouth, a loss in hydro-electric power, and a loss in the amount of water available for municipal water supplies, irrigation developments, farming, and grazing. Soil erosion studies are authorized by the statute. No laws dealing specifically with water conservation were found.

West Virginia authorizes circuit courts to establish and organize drainage, levee, and reclamation districts for the purpose of reclaiming, draining, or improving any low, swampy, or overflowed lands and to prevent overflow and protect cities. A petition by at least three landowners is required to establish such a district.

Pursuant to federal authority, West Virginia has entered into the Ohio River Valley Sanitation Compact with Illinois, Indiana, Kentucky, New York, Ohio, Pennsylvania, and Tennessee. The purpose of the compact is cooperation between the states in the abatement of pollution in the interstate waters within

the Ohio River Basin. Each state pledges its cooperation and agrees to enact necessary legislation so as to maintain the waters in a condition suitable for public and industrial water supplies. A commission set up by the compact is required to make a study of the problems involved and recommend uniform legislation.

The Potomac Valley Conservancy District is a compact between West Virginia, Maryland, Virginia, and the District of Columbia. This compact is similar in most respects to the Ohio River Valley Sanitation Compact except that it applies to the waters of the Potomac River Valley.

According to the State Water Commission of West Virginia, there are no present plans for a study or revision of water laws of West Virginia.

State Water Legislation, 1955, The Council of State Governments, EX-299 December 1955

Senate Concurrent Resolution 4 requests the Joint Committee on Government and Finance and the Commission on Interstate Cooperation to study the natural resources of the state including ground and surface waters. The study group is to recommend procedures for the continual study of the water resources of the state, including provisions for a state gauging program. It also is to formulate policies by which the state may carry on a continuing study of its ground water supplies. In addition, it is to study programs of local watershed development and to make recommendations about the financing of these projects.

WISCONSIN

SCS-TP-126, Soil Conservation Service, U. S. Department of Agriculture

Joint Resolution No. 90, A., Wisconsin Legislature, 1955, directs the joint legislative council to make a study of the policies, administration, and coordination of watershed management in the State, to evaluate the watershed-development work already being undertaken to determine the essentials of a coordinated program of watershed development, and to report its findings, together with its recommendations, to the 1957 Legislature.

Chapter 169, Laws of Wisconsin, 1955 (No. 40, S.), authorizes counties and towns to raise and expend funds to assist in creating and developing watershed protection areas or projects that are beneficial to such counties and towns, and authorizes towns to raise and expend funds to assist in developing or promoting the programs of soil conservation districts including or benefitting such towns.

Some Current and Proposed Water-Rights Legislation in the Eastern States, by Harold H. Ellis, Symposium Issue, Iowa Law Review, in process

In 1935, the Wisconsin legislature enacted a statute which requires that permits be obtained from the State's Public Service Commission for the diversion of water from any stream for "agriculture or irrigation". The quantity to be taken and the times when it may be taken are to be controlled by the Commission. This statute provides that water may not be diverted to the injury of public rights in the stream, and permits may be granted to divert other than "surplus water" (defined as water "which is not being beneficially used") only if the consent of "any riparians located on the stream", who may be injured thereby, are obtained. This statute also permits diversions from a stream into another watershed to reestablish and maintain navigable lake

and stream levels.

The Attorney General, in 1950, interpreted this statute to mean that "such a permit may be withdrawn or amended by the commission at any time, as no rights are vested in an applicant by its issue, the matter being one of privilege under the continuing control of the commission". He also stated that "since the statute says nothing in respect to the issuance of permits to nonriparian owners, it must be assumed that the common law applies". He indicated that owners of nonriparian lands should not be given such permits, although riparian landowners might be permitted to use stream waters on their own nonriparian lands if other riparian owners suffer no injury to the present or potential enjoyment of their property. It would appear that the statute is being so administered, and the Commission includes in each permit the express condition that it may be later amended if deemed necessary because of other applications to use water from the same stream, apparently with the view that each riparian owner is entitled to make some use of the stream.

The Commission apparently operated, until the date of the Attorney General's opinion, without any such guidelines or any definite standards for issuing or rejecting permits. Certain general guidelines were adopted by the Natural Resources Committee of State Agencies in 1951, which recommended, among other things, that permits be granted in cases where the percentage of the water diverted would be so low that no injury to public or private rights could be anticipated, and where any required consents of riparian owners are obtained.

Another statute provides, among other things, that no wells in excess of 100,000 gallons a day may be dug for any purpose without a permit from the State Board of Health, which may limit or prohibit wells that adversely affect water supplies. Other statutory provisions relate to the erection and maintenance of dams and other matters.

A proposed bill for the regulation of water resources in Wisconsin was included in an article by Glenn R. Coats in the Wisconsin Law Review in 1953.

This proposed bill would apply to both surface watercourses and ground waters, and would, in general, adopt the prior appropriation doctrine. It would enlarge the scope of the existing Wisconsin legislation in a number of ways, and would place the administration of all water rights legislation principally under one State agency. Under it, diversions could be made for any beneficial purposes, and no authorized diversion of stream waters would require the consent of riparian owners, as is often required under the existing legislation.

The bill resembles the proposed bills, considered in South Carolina, North Carolina, Arkansas, and Michigan, in several respects, but differs in others. Its application would be expressly limited to "diversions", or removal, of stream or ground waters. "Diversions", as defined, would include withdrawals whereby the water is not readily returned to the stream. Most of the other proposed bills would appear to apply to other uses as well, but some are vague as to how the administration of uses that do not require removal of the water would be handled. Such uses presumably would be at least partially protected in Wisconsin and some of the other States through such measures as limitations on (or conditions included in) appropriations for diversionary uses, and the establishment of minimum or other types of stream or lake levels. The proposed bill would except domestic uses and "existing rights". The latter would include the right to continue using water already legally put to beneficial use and not thereafter abandoned, as provided in the act.

Each appropriative right granted would be subject to the limitation of use for a "reasonable beneficial purpose". Priority of time of application would give the better right, but each right of diversion would be "subject to the power of the Commission to designate by appropriate units the maximum amount which may be used in any season, and the power of the Commission to restrict diversions for certain uses or from certain sources in any season". The bill further provides that "domestic uses and municipal uses shall be preferred to all other uses", and that the Commission, on the basis of continuing investigation, "shall determine the order of preference to be given other water users". Presumably, such preferences would at least be considered when there are two or more applicants for a limited water supply. In any event, a permit could be refused if it were "likely to interfere with the highest beneficial use of water" considering that the Commission "shall seek to conserve the use of water for all present and future needs. . ."

The Commission would be premitted to designate areas from time to time and could establish for such areas, or on a state-wide basis, (1) a certain ordering of preferences as to types of uses, (2) the maximum amounts to be used in any season for any purpose, (3) that diversions for certain purposes could be made without a permit, or (4) that diversions for certain purposes, or from certain sources, could be restricted in any season or shorter period.

Sept. 1955 Issue, Journal, American Water Works Association

Although no legislation has been introduced in the Wisconsin legislature concerning study or adoption of a code on water rights, representatives of the Natural Resources Committee, the College of Agriculture, the Public Service Commission, and other interested parties have held a meeting to discuss the subject of water law. It is probable that the matter will be thoroughly investigated by this group prior to the convening of the 1957 legislature. A bill now pending in the legislature to promote the conservation of underground water supplies provides that the approval of the State Board of Health must be secured before a new or additional well may be constructed for any purpose where the rate of withdrawal will exceed 70 gpm. Other proposed laws call for the development of a program of watershed management and the empowering of certain state government subdivisions to raise and appropriate funds for use in developing or creating watershed protection areas or projects.

Reports on Water Resources, The Council of State Governments, October 1955, EX-298

"Ground Water in Wisconsin", Report of Ground Water Working Group, Water Subcommittee Natural Resources Committee of State Agencies, July 1954, recommends that funds be provided to expand the cooperative ground water investigations and to study quality problems related to artificial recharge of aquifers, to irrigation, and to mine de-watering.

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Joint Resolution 103A requests the conservation committee of the Joint Legislative Council to conduct a study of public access to navigable waters and watershed management. Report to be made to the 1957 session.

Assembly Bill 294 ratifies the Great Lakes Basin Compact. . .

Chapter 334 (No. 422,A.), vests in soil conservation districts the additional authority to engage in activities concerning, and to construct, improve

operate, and maintain structures for, flood prevention or agricultural phases of the conservation, development, utilization, and control of water.

WYOMING

Report and Recommendations, October 1943, of Committee of the National Reclamation Association

Riparian rights have never been recognized in Wyoming.

The state constitution provides:

"Water being essential to industrial prosperity, of limited amount, and easy of diversion from its natural channels, its control must be in the State, which, in providing for its use, shall equally guard all the various interests involved."

"The water of all natural streams, spring, lakes or other collections of still water, within the boundaries of the State, are hereby declared to be the property of the State".

"Priority of appropriation for beneficial uses shall give the better right. No appropriation shall be denied except when such denial is demanded by the public interests."

The constitution also provides for the offices of state engineer and board of control.

Sept. 1955 Issue, Journal, American Water Works Association

Wyoming is still bound by laws made in 1947. A bill introduced in the 1955 legislature to provide more control of ground water development failed to pass. Some minor changes, however, were made in sections of less important irrigation laws. This state is working in the direction of a policy of careful water control.

(Note: The information regarding Missouri, Iowa, Kansas, Nebraska, North Dakota, South Dakota, Minnesota, Montana, and Wyoming, contained on pages 852-854, Sept. 1952 Issue, Journal, American Water Works Association, was taken from a paper presented at the Annual Conference of the Association in Chicago on June 13, 1955 by T. W. Thorpe, Pres., Thorpe Well Co., Des Moines, Iowa.)

State Water Legislation, 1955, The Council of State Governments, BX-299 December 1955

Chapter 246 (HB 229) directs the Legislative Interim Committee to undertake a study and investigation of underground water resources and laws. The Committee expects to prepare a compilation of the underground water laws of the Western States and to draft a proposed comprehensive underground water statute for Wyoming. The report is due in December 1956.

Chapter 71 (HB 103) authorizes soil conservation districts to enter into agreements with the United States or the state, to act as representatives of local groups, and to cooperate with governmental agencies under Public Law 566.

Chapter 72 (HB 28) authorizes the Wyoming Natural Resources Board to enter into contracts and agreements with the federal government and accept

federal funds for the construction of water development projects. The act states that the provisions do not apply to small watershed projects under Public Law 566.

Chapter 227 amends Section 71-402 of Wyoming Compiled Statutes to establish water use for steam power plants as a preferred use along with domestic and transportation purposes.

Chapter 141 (HB 20) authorizes the Wyoming Farm Loan Board, with the approval of the Wyoming Natural Resource Board, to make loans to duly organized irrigation districts. The Natural Resource Board is responsible for the planning of water development projects considered for loans and for approving plans and specifications.

Chapter 167 (HB 223) authorizes the creation of special flood control districts to be governed by a board of six elected directors. Such districts have the power to enter into contracts, acquire and hold property, sue and be sued, issue bonds for flood control purposes, and to levy real property taxes through the Board of County Commissioners.

ALASKA

State Water Legislation, 1955, The Council for State Governments, BX-299, December, 1955

The Legislative Council has undertaken a study of water resource development and intergovernmental relations and responsibilities. The study was undertaken on the initiative of the Council, and the report is due in November, 1956.

SECTION III

FEDERAL LAWS PERTAINING TO WATER RESOURCES

NAVIGATION

Report and Recommendations, October 1943, Committee of National Reclamation Association

Article I, section 8 (3) Constitution of the United States, provided that Congress shall have power "to regulate commerce with foreign nations, and among several States, and with the Indian tribes". Article I, section 10 (2) provided that: "No State shall, without the consent of the Congress lay any Imports or Duties on Imports or Exports, except what may be absolutely necessary for executing its inspection laws; and the net Produce of all Duties and Imports, laid by any State on Imports or Exports, shall be used for the Treasury of the United States; and all such laws shall be subject to the Revision and Control of the Congress."

The Act of February 4, 1791, Section 9 of the Act of May 18, 1796, Section 17 of the Act of March 3, 1903, Section 6 of the Act of March 26, 1804, Section 12 of the Act of February 15, 1811, Section 15 of the Act of June 4, 1812, and Section I of the Act of April 8, 1912, provided that the navigable waters in the States shall be public highways and forever free without any tax, duty, or toll therefor, imposed by the States.

Mr. Justice Field said in The Daniel Ball, 77 U.S. 577 (1870):

"Those rivers must be regarded as public navigable rivers in law which are navigable in fact. And they are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water. And they constitute navigable waters of the United States within the meaning of the Acts of Congress, in contradistinction from the navigable waters of the States, when they form in their ordinary condition by themselves, or by uniting with other waters, a continued highway over which commerce is or may be carried on with other States, or foreign countries in the customary modes in which such commerce is conducted by waters" (p.563).

Section 2476 of the Revised Statutes 43 U.S.C. 931 (1934) provides as follows: "All navigable rivers, within the territory occupied by the public lands, shall remain and be deemed public highways; and, in all cases where the opposite banks of any streams not navigable belong to different persons, the stream and the bed shall become common to both."

In Gibson v. United States, 166 U. S. 269 (1897), a petition by a riparian owner to recover damages for injury to property sustained by the construction of a dike in the Ohio River by the United States, the Supreme Court held that riparian ownership is subject to the obligation to suffer the consequences of an improvement to navigation.

In United States v. River Rouge Co., 269 U. S. 411 (1926), the Supreme Court had this to say concerning the rights of riparian owners: "It is well settled that in the absence of a controlling local law otherwise limiting the rights of a riparian owner upon a navigable river . . . he has, in addition to the rights common to the public, a property right, incident to his ownership of the bank, of access from the front of his land to the navigable part of the

stream, and when not forbidden by public law may construct landings, wharves or piers for this purpose . . . "

Section 3 (8) of the Federal Power Act as amended August 26, 1935 (49 Stat. 838) follows: "(8) Navigable waters means those parts of stream of other bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several States, and which either in their natural or improved condition, notwithstanding interruptions between the navigable parts of such streams by falls, shallows, or rapids compelling land carriage, are used or suitable for the transportation of persons or property in interstate or foreign commerce, including therein all such interrupting falls, shallows, or rapids together with such parts of streams as shall have been authorized by Congress for improvement after investigation under its authority; "

Water Resources of North Carolina, Department of Conservation and Development, 1955, p. 122

The Congress of the United States, in the River and Harbor Act of 1826, assigned responsibility for navigation improvement to the Corps of Engineers, U. S. Army . . . In the planning and construction of the Corps of Engineers projects, other Federal, State, and local agencies advise and assist where their interests are affected. On some of the projects, local interests are required to hold the United States free from damages, to furnish rights-of-way and spoil areas, and to furnish other assistance specified in the authorizing acts. All new investigations, and reviews of prior reports on investigations, are authorized by the Congress, usually at the request of the Congressional representatives from the locality concerned, directing the Secretary of the Army to cause the investigation or the review to be made under the direction of the Chief of Engineers, or the Board of Engineers for Rivers and Harbors, respectively.

Rules and Regulations Relating to the Navigable Waters of the United States, compiled in the Office of the Chief of Engineers and published by the U. S. Government Printing Office

This book sets forth the rules of the Department of Commerce and the supplemental regulations of the Department of the Army for display of signals on, and the operation of, all craft and accessories working on wrecks, engaged in dredging, surveying, or other work of improvement, and the use and navigation, in accordance with various acts of Congress cited, of the waters of all harbors, rivers, and inland waters of the United States, except the Great Lakes and their connecting and tributary waters, the Red River of the North, and the rivers emptying into the Gulf of Mexico and their tributaries. The appendix of the book contains the acts referred to above.

Navigational Clearance Requirements for Highway and Railroad Bridges, Department of Commerce, February, 1955

This report climaxes the initial phases of a concerted effort by the Department of Commerce to point out the need, in the public interest, for realistic Federal policies concerning navigational clearance requirements for highway and railroad bridges. The study leading to this report was based upon the premise that all transportation costs are ultimately borne by the general public in the cost of goods the public consumes, in the prices the public pays for services it receives, and in the taxes the public pays . . . (p. 111)

The report contains the following recommendations:

1. The navigable waterways of the United States should be classified in conformity with the categories indicated below. Navigational clearances for bridges should be prescribed, and the cost of providing such clearances should be financed, in accordance with the procedures recommended for each category mentioned.

(Categories A, B, C, D, and E follow in the report, pp. 3, 4, & 5)

2. The appropriate Federal official should consult, through public hearings or otherwise, with interested public and private surface transportation agencies, groups and interests:

a. Before classifying the waterways in the foregoing categories.

b. Before establishing any standard navigational clearances for bridges across any reach of waterway..

c. Before approving the navigational clearances on any bridge.

d. In undertaking a recurring review, which should be authorized to insure that appropriate adjustments are made in the classification of different waterways, and in navigational clearances for bridges, when needed to accommodate changed conditions.

3. The Federal Government and each owner of a railroad bridge or a publicly-owned highway bridge should continue to apportion the cost of altering bridges for accommodation of navigational needs as set forth in the Truman-Hobbs Act, as amended, with the need for such alterations to be based upon the standard navigational clearances hereinabove recommended.

4. Further study should be authorized, and adequate support funds provided, for ascertaining more clearly the economic relationship of overland and waterway transportation at bridges across waterways of special importance to existing navigation, with a view toward early establishment of standards for impelementing the foregoing recommendations as they apply to bridges now being advanced toward construction.

5. Where movable-span bridges are currently opened only at infrequent intevals, the Federal Government should continue its leadership in striving toward increased economy of performance in waterway and inland transportation relationship at bridge crossings by issuing special operating regulations that will reduce existing requirements for draw-span operators on the affected bridges, and minimize delays to overland traffic.

6. The incremental economic cost of providing navigational clearance in bridges should be taken into account in the economic justification of any navigation project now under study or to be studied, and in review of authorized navigation projects not yet advanced to construction . . . (pp. 3, 5 & 6)

Existing laws pertinent to navigational clearances for bridges are found in Title 33, United States Code, which contains all the existing general laws of the United States relating to navigation and navigable waters, and in Title 16, United States Code, which contains similar laws that apply only to the Tennessee River and its tributaries. (Specific sections of Titles 33 and 16 are set forth or referred to on pages 21-25, incl.) . . .

Tables 6 and 7 set forth navigational clearance data for channels in the First and Thirteenth Naval Districts and for channels in the First, Second, Third, Fifth, Seventh, Ninth, Eleventh, and Twelfth Coast Guard Districts . . . (pp. 85-92, incl.)

The appendices include comments by the Tennessee Valley Authority, the Secretary of Commerce, the Bureau of Public Roads, the Interstate Commerce Commission, and the Association of American Railroads; additional navigational clearance data; summary of letters from four manufacturers of radar equipment; list of waterway projects on which no commerce has been reported for five years or longer; list of waterways declared by Acts of Congress to be not navigable; and a map of the principal waterways of the United States (pp. 111 to 158, incl.).

FLOOD CONTROL

Report and Recommendations, October 1943, Committee of the National Reclamation Association

The Act of March 1, 1917, (39 Stat. 948) was the first flood-control act. By the terms of the Act there was appropriated 45 million dollars for flood control of the Mississippi River, not more than 10 million dollars to be expended annually by the Secretary of War in accordance with the plans of the Mississippi River Commission created by the Act of June 28, 1879 (21 Stat. 37). Another appropriation of 5.6 million dollars was made for flood control of the Sacramento River, not more than one million to be spent annually by the Secretary of War in accordance with the plans of the California Debris Commission. The principle of local cooperation was embodied in this Act.

The Act of May 15, 1928 (45 Stat. 534), dealt in a more comprehensive manner than ever before with the control of floods on the Mississippi River and its tributaries. In section 1, Congress adopted and authorized a project for the flood control of the Mississippi River in its alluvial valley in accordance with the engineering plan set forth and recommended in the report submitted by the Chief of Engineers to the Secretary of War, dated December 1, 1927, and printed in H. Doc. 90, 70th Cong., 1st Session (The Jadwin Plan). The sum of 325 million dollars was authorized to be appropriated for the purpose, this being in addition to the unexpended balance of appropriations made in the Flood Control Acts of March 1, 1917 and March 4, 1923. In section 2, Congress reaffirmed its traditional adherence to the principle of local contribution but provided that local contributions would not be required in this instance because of the large expenditures in the past by local interests. Section 8 provided that the project should be prosecuted by the Mississippi River Commission under the direction of the Secretary of War and the Chief of Engineers. Section 10 provided for the completion at the earliest practicable date of surveys previously authorized, directed that further projects on specified rivers be submitted, and provided that subsequent reports on rivers should include the effects of reservoirs on flood control, navigation, agriculture, and power revenues.

The Flood Control Act of June 22, 1936 (49 Stat. 1570), as amended by the Act of August 28, 1937 (50 Stat. 876), contains the following declaration of policy:

It is hereby recognized that destructive floods upon the rivers of the United States upsetting orderly processes and causing loss of life and property, including the erosion of lands, and impairing and obstructing navigation, highways, railroads, and other channels of commerce between the states

constitute a menace to national welfare; that it is the sense of Congress that flood control on navigable waters or their tributaries is a proper activity of the Federal Government in cooperation with States, their political subdivisions, and localities thereof; that investigations and improvements of rivers and other waterways, including watersheds thereof, for flood-control purposes are in the general welfare; that the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomscever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected.

Section 2 places investigations and improvements for flood control under the jurisdiction of the War Department and investigations of watersheds and measures for run-off and water-flow retardation and soil-erosion prevention under the jurisdiction of the Department of Agriculture except as to reclamation projects under the Interior Department. Section 3 provided that no money may be expended for flood-control projects until State or local governments give satisfactory assurances that they will (a) provide lands, easements, and rights-of-way necessary to the project, (b) save the United States from damages due to such construction, and (c) maintain and operate the works after construction. Section 4 authorizes state compacts for flood-control purposes. Section 5 makes appropriations for numerous specific projects, including reservoirs at various locations. Section 6 provides for surveys at designated places. Section 7 provides for continuance of surveys at certain localities where possibilities appear to exist for useful flood-control operations with economical development of hydroelectric power. Section 8 provides that this legislation is supplemental to the Act of May 15, 1928. Section 9 authorizes an appropriation of 310 million dollars for improvements and 10 million dollars for surveys . . .

Section 9 (b) of the Reclamation Act of 1939 (53 Stat. 1187) provides:

In connection with any new project, new division of a project, or supplemental work on a project, there may be allocated to flood control or navigation the part of said total estimated cost which the Secretary of the Interior may find to be proper. Items for any such allocation made in connection with projects which may be undertaken pursuant to subsection (a) of this section shall be included in the estimates of appropriations submitted by the Secretary for said projects, and funds for such portions of the projects shall not become available except as directly appropriated or allotted to the Department of the Interior. In connection with the making of such an allocation, the Secretary shall consult with the Chief of Engineers and the Secretary of War, and may perform any of the necessary investigations or studies under a cooperative agreement with the Secretary of War. In the event of such an allocation the Secretary of the Interior shall operate the project for purposes of flood control or navigation, to the extent justified by said allocation therefor.

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

The Act of December 2, 1944 (58 Stat. 887) declared the policy of Congress "to recognize the interests and rights of the States in determining the development of the watersheds within their borders and likewise their interests and rights in water utilization and control; as herein authorized, to preserve and protect to the fullest possible extent established and potential uses, for all purposes, of the waters of the Nation's rivers; to facilitate the consideration of projects on a basis of comprehensive and coordinated development; and to limit the authorization and construction of navigation works to those in which a substantial benefit to navigation will be realized therefrom and which can

be operated consistently with appropriate and economic use of the waters of such rivers by other users".

Only Congress may authorize any specific flood control project, and, before this can be done, the Chief of Engineers of the United States Army must submit to Congress a report on the project. All examinations and surveys of such projects must include a comprehensive study of the watersheds involved and data with regard to the extent and character of the area to be affected by the improvement, the probable effect upon any navigable water, the possible economic development and utilization of water power, and such other uses as may be properly related to or co-ordinated with the project. Also included in the examinations are investigations of measures for runoff and waterflow retardation and soil erosion prevention . . . (June 22, 1936,C.688, Sec. 2, 49 Stat. 1570)

In many parts of the country, dams and reservoirs are integral parts of an adequate flood control system, and, in those instances in which the reservoirs remain under federal control, the federal government is authorized to make contract with states, municipalities, private concerns, or individuals for domestic or industrial uses of surplus water, provided that such contracts will not affect any then existing lawful uses of such water. (Dec. 22, 1944, C.665, Sec. 6, 58 Stat. 890: May 23, 1952, C.328, Sec. 1 (a), 66 Stat. 93).

From an examination of all of the federal laws on flood control, it appears that Congress is constantly broadening the scope of flood control projects and interrelating them with other projects. While early flood control projects were merely attempts to avert disasters, modern projects encompass such fields as irrigation, navigation, conservation, and generation of power, with special emphasis on the retardation of the runoff of surplus waters.

MULTI-PURPOSE PLANING

Report and Recommendations, October 1943, of Committee of National Reclamation Association

Section 3 of the Act of March 3, 1925 (43 Stat. 1186), provided:

"The Secretary of War, through the Corps of Engineers of the United States Army and the Federal Power Commission, are jointly hereby authorized and directed to prepare and submit to Congress an estimate of the cost of making such examinations, surveys, or other investigations, as in their opinion may be required, of those navigable streams of the United States and their tributaries, whereon power development appears feasible and practicable, with a view to the formulation of general plans for the most effective improvement in combination with the most efficient development of the potential water power, the control of floods, and the need of irrigation; Provided, That no consideration of the Colorado River and its problems shall be included in the consideration or estimation provided herein" (p.1190).

In compliance with this provision, there was submitted to Congress H. Doc. 308, 69th Congress, 1st Session. This document was enacted into law, with modification, in the last paragraph of section 1 of the Act of January 21, 1927 (44 Stat. 110, 115). This was followed by the so-called "308 Reports" on river systems, which comprise approximately 200 separate reports on all the important rivers and their tributaries in the United States. They are comprehensive examinations of entire river systems for the coordination of navigation, flood control, irrigation, and power development (p. 95).

Report and Recommendations, October 1943, of Committee of National Reclamation Association

In the Act of June 21, 1906 (34 Stat. 386), Congress for the first time enacted general legislation, fixing specific authorization for the construction of water-power works in navigable waters. The Act provided for the approval of plans and specifications by the Chief of Engineers and the Secretary of War, and gave these officers authority to require, as a condition of approval, at any time, the construction, maintenance, and operation by the grantee without expense to the United States, of locks and other navigation facilities, or, if such facilities were constructed by the United States, to require the conveyance, by the grantee at its own expense, of the lands needed by the United States for such purposes, together with free use of water power for operation of such facilities.

Section 12 of the Act of July 25, 1912 (37 Stat. 201), provided as follows:

"In order to make possible the economical future development of water power the Secretary of War, upon recommendation of the Chief of Engineers, is hereby authorized in his discretion, to provide in the permanent parts of any dam authorized at any time by Congress for the improvement of navigation such foundations, sluices, and other works, as may be considered desirable for the future development of its water power" (p. 233) . . .

The Federal Power Act was originally enacted as the Federal Water Power Act, approved June 10, 1920 (41 Stat. 1063, U. S. C. 791-823). On March 3, 1921, it was amended to exclude therefrom any authority to license water power projects in National parks or National monuments (41 Stat. 1353). The Federal Power Commission, as created under the Act of 1920, consisted of the Secretary of Agriculture, Secretary of War, and the Secretary of the Interior. This commission was vested with authority to regulate, through permit system, hydroelectric projects on the public domain and in navigable rivers and their tributaries. The Act superseded the General Dam Act of 1906, as amended by the Act of June 23, 1910 (36 Stat. 593). (For the background of the Act see First Annual Report of the Federal Power Commission, 1921, pp. 44-50).

The commission was reorganized as an independent commission under the Act approved June 23, 1930 (46 Stat. 797). By Title II of the Public Utility Act of 1935, approved August 26, 1935 (49 Stat. 838, 16 U. S. C. Sup. IV, 791A-825r), the original Federal Water Power Act was made Part I of the "Federal Power Act" and Parts II and III were added to that Act. Part II vests in the commission jurisdiction over the interstate transmission of electric energy and public utility companies engaged therein. Part III relates to such companies and to licensees, and carries the administrative and procedural provisions of the Federal Power Act. . .

Section 9 of the Reclamation Law of 1939 (Act of August 4, 1939, 53 Stat. 1187) provides:

"Sec. 9 (c). The Secretary (of the Interior) is authorized to enter into contracts to furnish water for municipal water supply or miscellaneous purposes: Provided, That any such contract either (1) shall require repayment to the United States, over a period not to exceed forty years from the year in which water is first delivered for the use of the contracting party, with

interest not exceeding the rate of 3½ percentum per annum if the Secretary determines an interest charge to be proper, of an appropriate share as determined by the Secretary of that part of the construction costs allocated by him to municipal water supply or other miscellaneous purposes; or (2) shall be for such periods not to exceed forty years, and at such rates as in the Secretary's judgment will produce revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost and an appropriate share of such fixed charges as the Secretary deems proper, and shall require the payment of said rates each year in advance of delivery of water for said year.

Any sale of electric power or lease of power privileges, made by the Secretary in connection with the operation of any project or division of a project, shall be for such periods not to exceed forty years, and at such rates as in his judgment will produce power revenues at least sufficient to cover an appropriate share of the annual operation and maintenance cost, interest on an appropriate share of the construction investment at not less than 3 percentum per annum, and such other fixed charges as the Secretary deems proper: Provided further, That in said sales or leases preference shall be given to municipalities and other public corporations or agencies; and also to cooperatives and other nonprofit organizations financed in whole or in part by loans made pursuant to the Rural Electrification Act of 1936 and any amendments thereof.

Nothing in this subsection shall be applicable to provisions in existing contracts, made pursuant to law, for the use of power and miscellaneous revenues of a project for the benefit of users of water from such project. The provisions of this subsection respecting the terms of sales of electric power and leases of power privileges shall be in addition and alternative to any authority in existing laws relating to particular projects. No contract relating to municipal water supply or miscellaneous purposes or to electric power or power privileges shall be made unless, in the judgment of the Secretary, it will not impair the efficiency of the project for irrigation purposes."

STREAM POLLUTION

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

The United States Congress in 1948 passed the National Water Pollution Control Law (Public Law 845) which is administered by the Division of Water Pollution Control of the United States Public Health Service (U. S. Department of Health, Education and Welfare), under the supervision of the Surgeon General. This agency, together with the Federal Works Administrator, has direct responsibility for carrying out the provisions of the federal law.

The federal law recognizes the primary responsibility of the states to regulate and control pollution but supports and aids the state programs through the furnishing of technical research, the preparation of comprehensive programs for eliminating or reducing pollution of interstate waters and their tributaries, the conducting of investigations and surveys relating to specific water pollution problems, and like activities. The federal law also encourages interstate compacts and uniform laws relative to water pollution control. The Federal Works Administrator is authorized to make loans to any state, municipality or interstate agency for the construction of treatment plants. Such loans may not exceed, for any one project, "33 1/3 per centum of the estimated reasonable cost thereof" or $250,000, whichever amount is smaller.

Under certain conditions the Surgeon General may determine that pollution

has resulted in a public nuisance, as defined by the act, and if the state or interstate water pollution agency for any reason does not take the necessary action to accomplish abatement, the Secretary of Health, Education and Welfare, with the consent of the state or interstate agency, may request the United States Attorney General to bring suit to secure abatement.

The increasing importance of water conservation is presently being recognized by members of Congress in the form of two identical bills introduced in the House of Representatives and the Senate on February 1, 1955 to amend the present National Water Pollution Control Law. These proposals place greater emphasis on research, surveys and the like, and provide for allotments to state and interstate agencies in accordance with a formula set out in the bills and based on population, extent of the water pollution problem, and financial need of the state or states concerned. The amount of the federal appropriation for grants to the state and interstate agencies would be determined by Congress, but for the first two years of the program the proposals specify a ceiling of two million dollars. One significant change would permit the federal government to institute court action to secure abatement without securing the consent of the state or interstate water pollution agency of the state or states in which the polluted matter is being discharged.

Newsletter No. 5, November 17, 1955, National Water Conservation Conference

A group of about 53 officials representing 28 states, five interstate agencies, and seven other groups dealing with stream pollution activities unanimously agreed at a meeting in Atlantic City, New Jersey, October 11, to recommend, as a minimum, two amendments to a bill pending in the Congress to extend the Federal Water Pollution Control Act.

Both amendments were drawn by the New York State Legislative Committee on Interstate Cooperation pursuant to conferences with representatives of numerous state pollution control agencies.

The bill, S. 890, was reported by both Senate and House Committees on Public Works but was not brought up for a vote by the Congress during the last session. It is scheduled to be acted upon early next year.

One amendment would increase the membership of a "Water Pollution Control Advisory Board" set up by the bill so as to have representation from the states at least equal to the federal representation. The second amendment calls for a four-part revision of Section 7 (b) of the bill (as reported by the House Committee dealing with administration and enforcement). The effect of the amendment is to protect active states and interstate agencies from being overridden by the U. S. Public Health Service.

RECLAMATION, IRRIGATION, AND WATER CONSERVATION AND UTILIZATION

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

In 1902 Congress passed the Federal Reclamation and Irrigation Law which outlined a comprehensive reclamation scheme and provided for the examination and survey of lands and for construction and maintenance of irrigation works for the storage, diversion, and development of waters for the reclamation of arid and semi-aric lands (32 Stat. 390). The Act is administered by a Commissioner of Reclamation under the supervision and direction of the Secretary of the Interior. The right to the use of water acquired under the provisions of this act "shall be appurtenant to the land irrigated, and beneficial

use shall be the basis, the measure, and the limit of the right". In interpreting this language the courts have held that the right to the use of water can be acquired only by prior appropriation for beneficial use, and such right, when thus obtained, is a property right which, when acquired for irrigation, becomes part and parcel of the land upon which it is applied. The courts have also held that the government, like an individual, can appropriate only so much as it applies to beneficial uses.

The Secretary of the Interior, in carrying out the provisions of this chapter, is directed to proceed in conformity with the laws of the state or territory within which a project is located.

The primary purpose of the act is to locate and construct irrigation works for the storage, diversion, and development of waters, including artesian wells, in arid or semi-arid regions which are suitable for farming except for the lack of water. No such project may be started, however, until it has been recommended by the Secretary of the Interior and approved by the President. After such approval has been obtained, but before the contract is let or actual construction has started, the owners of private lands within the project area must agree to dispose of all lands in excess of the area which the Secretary of the Interior deems sufficient for the support of a family and at a price determined by the Secretary. If an owner refuses to do this, his land will not be included in the project.

The persons who are to benefit from the irrigation project must contract with the government to pay for the benefits received. The contracts may not be made for a period longer than forty years, during which time repayment in full for construction, operation, and maintenance must be made to the government.

Surplus water and water for power may be disposed of, provided it will not be detrimental to the water service for the irrigation project (9a F.C.A., Title 43, Sect. 371-547).

Congress has also passed an act "for the purpose of stabilizing water supply and thereby rehabilitating farmers on the land and providing opportunities for permanent settlement of farm families". In order to accomplish this, the Secretary of the Interior is authorized to construct and maintain water conservation and utilization projects. The United States shall retain title to the dams, reservoirs, irrigation, and other such projects until Congress provides otherwise. Not more than $2,000,000 may be spent for dams and reservoirs on any one project, nor may more than $500,000 be spent for flood control on any one project. The furnishing of water and facilities for irrigation is the primary purpose of this act, but water for municipal or miscellaneous water supplies or for developing power may be sold, provided not more than $500,000 is spent on any one project for these purposes, and provided that the use of water for these purposes will not impair the efficiency of the project for irrigation purposes. All of those persons who intend to use the water for irrigation purposes must first sign a contract with the government wherein they promise to pay for the water used. These contracts may not be for more than forty years, at the end of which time the government will have been paid back the amount of money that was expended on construction costs of the project allocated to irrigation plus operating and maintenance expenses. The amount that the consumer has to pay for the water depends on how much he uses and how much the project costs (5 F.C.A., Title 16, Secs. 590Y-590Z11).

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

In 1935, Congress passed a soil conservation act which recognized that "the wastage of soil and moisture resources on farm, grazing, and forest lands of the Nation, resulting from soil erosion, is a menace to the national welfare, and that it is hereby declared to be the policy of Congress to provide permanently for the control and prevention of soil erosion and thereby to preserve natural resources, control floods, prevent impairment of reservoirs, and maintain the navigability of rivers and harbors, protect public health, public lands, and relieve unemployment". In connection with this policy, the Secretary of the Interior is authorized to "conduct surveys, investigations, and research relating to the character of soil erosion and the preventive measures needed, . . . to carry out preventive measures", and to enter into agreements with, and/or furnish financial aid to, governmental agencies or individuals (5 F.C.A., Title 16, Sec. 590a: Sec. 1,49 Stat. 163).

Water Resources of North Carolina, Department of Conservation and Development, 1955, pp. 103-104

Public Law 566, 83rd Congress, approved August 4, 1954, contains a declaration of Federal policy that "erosion, floodwater, and sediment damages in the watersheds of the rivers and streams of the United States, causing loss of life and damage to property, constitute a menace to the national welfare; and that it is the sense of Congress that the Federal Government should cooperate with States and their political sub-divisions, soil or water conservation districts, flood prevention or control districts, and other local public agenci for the purpose of preventing such damages and of furthering the conservation development, utilization, and disposal of water and thereby of preserving and protecting the Nation's land and water resources."

The act authorizes the Secretary of Agriculture, in order to assist local organizations in preparing and carrying out plans for works of improvement, upon application of local organizations, to take the following actions:

(1) Conduct such investigations and surveys as may be necessary to prepare plans for works of improvement;

(2) Make such studies as may be necessary for determining the physical and economic soundness of plans for works of improvement, including a determination as to whether benefits exceed costs;

(3) Cooperate and enter into agreements with, furnish financial and other assistance to, local organizations; and

(4) Obtain the cooperation and assistance of other Federal agencies in preparing and carrying out plans for works of improvement.

The act provides that the following actions shall be taken by local organizations as conditions for providing Federal assistance for the installations for works of improvement:

(1) Acquire without cost to the Federal Government such land, easements, or rights-of-way as will be needed in connection with works of improvement installed with Federal assistance;

(2) Assume such proportionate share of the cost of installing any works of improvement involving Federal assistance as may be determined by the Secretary of Agriculture to be equitable in consideration of anticipated benefits from such improvements;

(3) Make arrangements satisfactory to the Secretary of Agriculture for defraying costs of operating and maintaining such works of improvement,

in accordance with regulations presented by the Secretary;

(4) Acquire, or provide assurance that landowners have acquired, such water rights, pursuant to State law, as may be needed in the installation and operation of the work of improvement; and

(5) Obtain agreements to carry out recommended soil conservation measures and proper farm plans from owners of not less than 50 per cent of the lands situated in the drainage area above each retention reservoir to be installed with Federal assistance.

The act authorizes the Secretary of Agriculture, at such time as he and the interested local organization have agreed on a plan for works of improvement and he has determined that the benefits exceed the costs and the local organization has taken the actions set forth in the preceding paragraph, to assist such local organization in developing specifications and in preparing contracts for construction and to participate in the installation of such works in accordance with the plan, under the following conditions:

(1) Any works of improvement shall not be in a watershed exceeding 250,000 acres and shall not include any single structure which provides more than 5,000 acre-feet of total capacity.

(2) No appropriation shall be made for any plan for works of improvement, which provides more than 2,500 acre-feet, unless such plan has been approved by resolutions adopted by the Committee on Agriculture and Forestry of the Senate and the Committee on Agriculture of the House of Representatives, respectively.

(3) At least 45 days (counting only days occurring during any regular or special session of the Congress) before such installation involving Federal assistance is commenced, the Secretary of Agriculture shall transmit a copy of the plan and the justification therefor to the Congress through the President.

(4) Any such plan which includes Federal assistance for flood water detention structures shall be submitted to the Secretary of the Army for his views and recommendations (presumably based on the views and recommendations of the Chief of Engineers, Department of the Army) at least 60 days prior to transmission of the plans to the Congress through the President.

(5) Prior to any Federal participation in the works of improvement, the President shall issue such rules and regulations as he deems necessary to carry out the purpose of the act, and to assure the coordination of the work authorized under the Act and related work of other agencies, including the Department of the Army.

Paper presented before the North Carolina League of Municipalities by J. Reuel Armstrong, Solicitor, Department of the Interior, October 24, 1955, at Durham, North Carolina

Let me say a few words now about the Federal Government. Over the years a great complex of Federal legislation dealing with the Nation's water resources has been built up. Nearly a score of Government bureaus and agencies are carrying out responsibilities in this field. A large part of this effort is aimed at cooperating with States, municipalities, districts, corporations, and individuals to solve their water and related land-use problems. This cooperation and participation by the Federal Government ranges from the collection and dissemination of information to actual material and financial assistance. The body of Federal law on this subject is enormous, and time does not permit me even to summarize it here. However, I should like to mention briefly two recent Acts passed by the 83rd Congress and one pending bill, which I feel can be of practical benefit to the people of your State.

The first of these enactments is the Watershed Protection and Flood

Prevention Act. Here Congress is dealing with water conservation almost where the raindrop falls. It is the first legislative recognition of the great importance of the up-stream watershed protection in our over-all water resources policy. And for the first time there is also a broad program of Federal technical and financial assistance to any local watershed group which will initiate, carry out, and share the cost of watershed protection. This type of protection will not only help to conserve water for agricultural uses but will serve to control downstream floods.

The second piece of legislation I want to mention is an amendment to the Water Facilities Act. No longer limited to the 17 Western States, the Water Facilities Program which is administered by the Department of Agriculture now makes available, throughout the entire Nation, loans for developing agricultural water improvements on farms and ranches. Direct or insured loans are also available for drainage facilities, reforestation, and other water and soil conservation measures. Farmers and ranchers often need credit in order to establish conservation systems, or to tide them over while they shift to a more profitable type of land use. These new credit provisions are a signicant means of encouraging and furthering soil and water conservation.

As I mentioned, there is now pending before Congress a bill which I think could hold much promise for North Carolina. This is the so-called Small Projects Bill. It has passed both the Senate and the House and is now before a conference committee. The chances for final enactment during the next session of Congress are very good. In its present form, it would authorize Federal aid to States, to municipalities, and to other local organizations in the construction of small projects for irrigation, drainage, water storage, and saline water intrusion control. Federal loans and grants for these works would be made after a recommendation by the Secretary of Agriculture. Loans for projects greater than $500,000, however, would take special authorization by Congress.

BEACH EROSION

Water Resources of North Carolina, Department of Conservation and Development, 1955, pp. 158-162, inclusive

Federal laws pertaining to beach erosion cover investigations and studies made by the Chief of Engineers, Department of the Army, assisted by the Beach Erosion Board, in cooperation with agencies of States and Territories; investigations by the Chief of Engineers of improvements at inlets and mouths of rivers; general investigations with a view to preventing beach erosion and determining the most suitable methods for the protection, restoration, and development of beaches, and publication of data and information concerning erosion and protection of beaches and shore lines; and Federal participation in the cost of protecting the shores of publicly-owned beaches.

Public Law 520, 71st Congress, provides as follows:

a. The Chief of Engineers shall cause investigations and studies to be made, in cooperation with agencies of States and Territories, with a view to devising effective means of preventing erosion of shores by waves and currents.

b. Expenses thereof may be paid from funds appropriated for examinations, surveys, and contingencies for rivers and harbors.

c. The Secretary of the Army may release to appropriate State agencies information obtained from these investigations and studies prior to formal transmission of reports to the Congress.

d. No money therefor shall be expended in any State which does not provide for cooperation with the agents of the United States and contribute to the project such funds and/or services as the Secretary of the Army may deem appropriate and require.

e. The Beach Erosion Board, consisting of four officers of the Corps of Engineers and three persons selected with regard to their special fitness by the Chief of Engineers from among the State agencies cooperating with the Department of the Army, shall furnish such technical assistance as may be directed by the Chief of Engineers in the conduct of such studies as may be undertaken and shall review the report of the investigations made.

f. The salary of the civilian members shall be paid by their respective States. Traveling and other necessary expense connected with their duties on the Board shall be paid in accordance with the law and regulations governing the payment of such expenses to civilian employees of the Corps of Engineers.

Public Law 409, 74th Congress, provides that every preliminary examination and survey report pertaining to such investigations, in addition to other information which the Congress has directed shall be given, shall contain information regarding the configuration of the shore line and the probable effect thereon that may be expected to result from the improvement, having particular reference to erosion and/or accretion for a distance of not less than ten miles on either side of the concerned entrance.

Public Law 166, 79th Congress, provides as follows:

a. The Chief of Engineers, through the Beach Erosion Board, shall make general investigations with a view to preventing erosion of the shores of the United States by waves and currents and determining the most suitable methods for the protection, restoration, and development of beaches, and shall publish from time to time such useful data and information as the Board may deem to be of value to the people of the United States.

b. The cost of these general investigations shall be borne wholly by the United States.

c. All projects having to do with shore protection shall be referred to the Beach Erosion Board for consideration and recommendation.

d. The Beach Erosion Board, in making its report on any cooperative investigation or study under the provisions of Public Law 166, 79th Congress, shall state its opinion as to (1) the advisability of adopting the project; (2) what public interest, if any, is involved in the proposed improvement; and (3) what share of the expense, if any, should be borne by the United States. (General investigations do not result in the formulation of specific plans of protection or remedial works for a particular locality, since a separate study is required to develop such plans for each locality.)

Public Law 727, 79th Congress, provides as follows:

a. It is the policy of the United States to assist in the construction, but not the maintenance, of works for the improvement and protection, against erosion by waves and currents, of the shores of the United States that are owned by States, municipalities, or other political subdivisions.

b. The Federal contribution toward the construction of protective works shall not in any case exceed one-third of the total cost.

c. The plan of protection must have been specifically adopted and authorized by the Congress after investigation and study by the Beach Erosion Board.

d. When the Chief of Engineers shall find that any such project has been constructed in accordance with the authorized plans and specifications, he shall after appropriation by the Congress, cause to be paid to the State, municipality, or political subdivision the amount authorized by the Congress.

e. The Chief of Engineers, may in his discretion, from time to time, make payment on such construction as the work progresses. These payments, however, including previous payments, if any, shall not be more than the United States pro rata part of the value of the labor and materials which have been actually put into such construction in conformity to said plans and specifications.

f. The construction of improvement and protective works may be undertaken by the Chief of Engineers upon the request of, and contribution of requir funds by, the interested State, municipality, or other political subdivisions.

g. Federal participation in the construction of works for pretecting privately-owned shores is not authorized.

Procedures for Cooperative Studies

a. By executive ruling, the agency applying for an investigation of any specific locality will be required to contribute 50 per cent of the estimated cost of the investigation. This contribution may be either in funds or services, as deemed appropriate and required by the Chief of Engineers, by authority of the Secretary of the Army. The studies result in a report containing plans and specific recommendations to improve or remedy a condition at a particular locality.

b. Any owner or group of owners of shore property on the Atlantic, Pacific, Gulf Coasts, and on the Great Lakes and the Territories, desiring to initiate the execution of a cooperative beach erosion control study, should first consult the appropriate State, county, or municipal agency with a view to such agency making application for the study.

c. The agency, on behalf of the property owners or on its own initiative, should discuss the erosion problem with the District Engineer and request a cooperative study, if desired. After such discussion and request, the District Engineer will present a preliminary analysis of the problem, a summary of all readily available data, and the purpose of the study to the Beach Erosion Board with a request for conference and inspection of the site by representatives of the Beach Erosion Board.

d. During this conference the preliminary analysis of the District Engineer will be modified, if necessary, and a work program will be formulated with itemized estimates of cost, which will be submitted by the District Engineer through the Division Engineer to the Beach Erosion Board for approval. The Board will advise the District Engineer of any changes in the outline of work believed necessary and the estimated cost of the Board's part of the work. The District Engineer will then estimate the total cost of the proposed study and will arrange the terms of cooperation and the completion of a formal application by the cooperating agency.

e. Most efficient coordination and prosecution of the work will normally be obtained when the District Engineer secures all of the information required for the report, with the cooperating agency transferring to the District Engineer funds in an amount equal to one-half of the total estimated cost of the study. Where this procedure is not satisfactory to the cooperating agency, the cost of the study may be divided by allocating certain phases of the work to the cooperating agency on the basis of estimated costs, with supplementary transfer of funds by the cooperating agency to the District Engineer in such amount as to make the share of the cooperating agency equal to one-half of the total estimated cost of the study. The estimated cost will be the estimated cost of performing the work by the District Engineer concerned, with credit normally to be allowed only for work performed subsequent to the consummation of the agreement covering the study.

f. The completed formal application, including a statement of the estimated cost and method of cooperation, will be forwarded to the Chief of Engineers with the recommendations of the District and Division Engineers.

The Chief of Engineers will refer the application to the Beach Erosion Board for review and recommendation. Upon approval of the application by the Chief of Engineers, the District Engineer will be directed to proceed with the study in cooperation with the engineer of the cooperating agency.

g. Upon conclusion of the investigations, the Beach Erosion Board will submit its report, together with the reports of the District and Division Engineers embodying their findings and recommendations, to the Chief of Engineers for transrission with his recommendations through the Secretary of the Army to the Congress. Complete copies of these reports will be furnished the cooperating agency. Where Federal participation in the cost of construction works is involved, a copy of the proposed report will be referred to the cooperating agency for its comments prior to submission of the document to the Congress.

Procedures of Federal Participation in Construction

Federal participation will require approval by the Chief of Engineers of detailed plans and specifications and of arrangements for the prosecution of the project, prior to commencement of work when executed by the local agency. Federal participation does not relieve local interests of the following responsibilities generally prescribed for that portion of the work which protects non-Federal real estate:

a. Maintenance and repair during the useful life of the works as may be required to serve their intended purpose.

b. Provision of all necessary lands, easements, and rights-of-way.

c. Claims for damages that may arise either before, during, or after prosecution of the work.

Construction will be performed by the local agency, unless it requests that the construction be undertaken by the Chief of Engineers and contributes its share of the funds therefor.

Public Law 875, 81st Congress, provides that, in any major disaster, Federal agencies are authorized when directed by the President to provide assistance to States and local governments, including performance on public or private lands protective and other work essential for the preservation of life and property, clearance of debris and wreckage, emergency repairs to and temporary replacements of public facilities of local governments damaged or destroyed in such major disaster, and contributions to States and local governments for such protective and other work, clearance, emergency repairs, and temporary replacements.

Executive Order No. 10427, January 15, 1953, designates the Federal Civil Defense Administrator as the official to foster the development of such State and local organizations and plans as may be necessary to cope with major disasters. The order provides that (1) Federal disaster relief shall be deemed to be supplementary to relief afforded by State, local, or private agencies and not in substitution therefor; (2) Federal financial contributions for disaster relief, shall be conditioned upon reasonable State and local expenditures for such relief; (3) the limited responsibility of the Federal Government for disaster relief shall be made clear to State and local agencies concerned; and (4) the States shall be encouraged to provide funds which will be available for disaster relief purposes.

(Advisory Bulletin No. 135, Disaster Series, Federal Civil Defense Administration, January 24, 1953, provides as follows:

A. When the Governor of the State determines that Federal assistance under the provision of Public Law 875 will be required, he should request

such assistance of the President. Public Law 875 provides:

(1) The Governor certify the need for Federal assistance, and

(2) He give assurance of expenditure of a reasonable amount of the funds of the State, local governments therein, or other agencies, for the same or similar purposes.

B. The State Civil Defense Director, if so authorized by the Governor, should promptly furnish the Regional Director (Thomasville, Georgia, in the case of North Carolina and other Southeastern States) all pertinent information then available regarding the nature and magnitude of the disaster, type of assistance desired, an estimate of Federal funds needed, and other Federal assistance desired. The Regional Director should promptly forward this information with his recommendations to the Administrator.

C. The Governor's request will be referred by the White House to the Federal Civil Defense Administrator for recommendation.

D. Prior coordination between the State and the Regional Office of the Federal Civil Defense Administration should result in the Administrator having received the Regional Director' recommendation. If this has not been received, the Administrator will request it through our emergency communications system.

E. The Administrator will review the Regional Office material and will forward his recommendations to the President. The President will advise the Governor of his decision. Such decision may be (1) that a major disaster exists, (2) that no major disaster exists, or (3) that final determination is withheld pending further developments.

F. Where the President determines a major disaster exists, a written agreement will be entered into by the Governor of the State and the Federal Civil Defense Administration regarding the several responsibilities of the Federal, State and local governments.

G. Funds allocated by the President for use in the disaster, and other Federal assistance, will be used in conformity with the provisions of the forementioned agreement.)

News Letter, American Shore and Beach Preservation Association, September 15, 1955

The report of the Secretary of the Army on H.R. 4470 providing for amendment to the Act of August 13, 1946 (P.L. 727, 79th Cong.) was released by the Chairman of the House Public Works Committee. Pertienent parts are extracted herewith.

"H.R. 4470 would amend the basic policy in the 1946 Act by extending Federal assistance to restoration and protection of privately owned shores. While the Department of the Army, based on experience to date, considers that it would be in the public interest to protect private property in certain cases, it is suggested that the law specifically define the conditions under which Federal assistance toward such protection would be provided. The following criteria are suggested for specification in the law:

1. (a) The shores must be available, accessible and suitable for public use, and satisfactory assurances must be given that they will remain in public use throughout the useful life of the project; or

(b) The privately owned shores must serve to protect adjoining publicly owned property under conditions which make it economically advantageous to preserve the privately owned shore in order to prevent imminent damage to public property; or

(c) The privately owned shores are so situated as to receive incidental benefit from the project at no added cost.

2. Except where private benefits are entirely incidental, the Federal contribution toward the cost should be reduced below the maximum permitted by law in the ratio that estimated private benefits bear to estimated total benefits.

Section 1 (a) (1) of H.R. 4470 would change the language of the Act of 1946 from ". . . assist in the construction . . ." to ". . . assist in paying the cost of projects, initiated by States or political subdivisions thereof, for the construction . . ." The purpose of this change in language is not clear, but it may be intended to make eligible for Federal reimbursement, works which were planned and accomplished entirely as local projects without prior aid of a cooperative study by the Beach Erosion Board created by the Act of July 3, 1930 (46 Stat. 945). Any change in the law which would permit such an interpretation is believed to be undesirable. Such local works, mostly unsuccessful, have probably cost in the aggregate many millions of dollars. Technical and economic evaluation of the worth of such works would be difficult and controversial, and establishment now of such a retroactive policy would be without precedent in Federal public works.

Section 1 (a) (2) of H.R. 4470 would amend the provision in the Act of 1946 which authorizes Federal aid toward the repair and protection of seawalls heretofore constructed by political subdivisions to protect important public highways. The amendment proposed would provide Federal aid additionally to seawalls hereafter constructed, and would further make possible retroactive reimbursement for previous repairs and improvements of such seawalls by local interests. The Department of the Army believes that studies by the Beach Erosion Board provide a means for securing appropriate Federal aid for any shore protection measures hereafter required. The Department does not favor any general provision of law which would provide retroactive reimbursement for works constructed without benefit of a prior study by the Board. It is believed that the seawall proviso in the 1946 Act provides unwarranted special consideration for shores which have been protected by seawalls as compared with shores protected by other means, and that a more equitable basis for Federal aid would be established by deletion rather than amendment of the seawall proviso.

Section 1 (c) of H.R. 4470 may be construed to authorize Federal studies of seawall-protected shores without the customary requirement for a local contribution toward the cost of the study. It is believed that seawall studies should meet the same conditions of local cooperation as other cooperative beach erosion studies. Section 1(c) would thus be unnecessary.

The Department of the Army offers no objection to the enactment of H.R. 4470 if revised in accordance with the foregoing comments. However, the Department is of the opinion that certain additional modifications of existing law pertaining to shore protection would be advisable in the public interest. These modifications concern Federal assistance toward periodic beach nourishment, and the exclusion from the limitation of Federal assistance of those remedial measures necessitated by coastal works owned by the United States and constructed or acquired specifically for purposes of the Armed

Forces. Since the Bureau of the Budget is of the opinion that such modifications are not germane to the introduced bills, consideration is being given to the submission of these additional provisions as a separate legislative proposal."

Hearings on H.R. 4470 will probably be held soon after Congress reconvenes in January 1956.

SEA WATER AND ARTIFICIAL RAINFALL

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

On the federal level, it has been pointed out previously that efforts are constantly being made to assist individuals, industries, and state and local governments in solving their water problems. In connection with long-range planning, Congress in 1952 passed an act wherein it is stated that "in view of the acute shortage in the arid areas of the Nation and elsewhere and the excessive use of underground waters throughout the Nation, it is the policy of the Congress to provide for the development of practicable low-cost means of producing from sea water, or from other saline waters, water of a quality suitable for agriculture, industrial, municipal, and other beneficial consumptive uses on a scale sufficient to determine the feasibility of the development of such production and distribution on a large-scale basis, for the purpose of conserving and increasing the water resources of the Nation". In order to help cut the cost of such a process, the act also provides for the studying of methods for the recovery and marketing of by-products resulting from and incident to the production of water.

Another unique method of increasing the water supply in localized areas is to artificially induce rainfall. This has already been accomplished with some success, but it has already raised some involved legal problems. The major problem is the question of who owns the clouds. It is thought that it will probably be necessary to regulate rain-making by rules of nation-wide application and by international treaty in the near future.

Water Resources of North Carolina, Department of Conservation and Development, 1955

Another somewhat spectacular water-law puzzle has arrived with the advent of the scientific rain maker, or more exactly, the rain increaser. The seeding of clouds with silver iodide for the purpose of chilling them and inducing them to drop more moisture over one state has brought threats of action on the part of other States which would have received benefit from those same clouds later in the natural course of their travels. Precipitation of high value to one person or group may flood another group. It is open to question how any court could determine damage or benefit from cloud seeding. Some states, however, are consideraing drafts of legislation regarding this new adventure in the field of use of water resources.

SECTION IV

CONSIDERATIONS AFFECTING FUTURE WATER LEGISLATION

Research Report No. 5, Louisiana Legislative Council, April 7, 1955

It is the opinion of leading water experts that a good water policy should not be concerned merely with immediate or localized problems but rather should be formulated so that all foreseeable conditions or situations can be effectively met regardless of when or where in the state such conditions or situations arise. Nor should a good water policy be concerned only with a shortage of water or an excess of water. It should correlate and deal simultaneously with all the various fields relating to water, such as surface and ground water use, pollution, irrigation, conservation, drainage, and flood control. Such a policy should also provide for cooperation with the federal government and other states. . .

Of prime importance to the successful initiation of a new or changed water policy, according to experts in the field, is the proper education of the people whom it will effect. Numerous attempts to introduce an improved water policy have failed because the people for whose benefit it was intended were not properly indoctrinated prior to an attempt at passage.

The consensus of opinion of water engineers and other water policy experts is that the first step, and one of the most important steps, to be taken in the revision of a water policy is to conduct a thorough investigation by skilled personnel of the existing water resources, the uses to which the water is to be put in the foreseeable future, and the standards of quality necessary for such uses. This involves the collection and correlation of quantities of data from the users or potential users of water and in the fields of engineering, chemistry, geography, topography, and geology. What changes need to be made, if any, cannot be determined until such an investigation has been made . . .

There are problems in connection with irrigation. To begin with, the mere fact that irrigation is practiced in a particular area shows that shortages of water occur in that area. It would seem, then, that some type of control is necessary to prevent the exhaustion of the water supply. Furthermore, irrigation on a large scale involves a fairly large capital outlay. It is generally agreed that protection should be given these investors by prohibiting newcomers from appropriating so much of the water supply that it would create a shortage for the original investor, thereby rendering his investment useless. There are some of the opinion that in those areas where a general water shortage exists the available supply should not be used at all for irrigation. The reason for this is that almost all of the water for irrigation is lost by evaporation or transpiration and hence does not return to the water supply. This is considered an "uneconomic" use of water.

Any waste of water is a matter for consideration by a water conservationist. Some examples of waste are lack of, or improper or incomplete, development, seepage losses from unlined irrigation canals and ditches, failure to reuse water when possible in industrial processes, flowing of unused artesian wells, failure to impound waters when possible during periods of excess flowage, improper farming methods resulting in accelerated surface drainage, permitting the growth of useless vegetation with more than normal consumption capacities, and permitting the intrusion of salt water into fresh water bodies when it is possible to prevent it. The prevention of these and many other sources of waste could be considered when forming a

water policy. Some suggested measures of coping with waste in general are (1) research to discover more efficient techniques of utilization, (2) education of water users, (3) administrative regulation, (4) penal sanctions, and (5) financial aid for the improvement of waste disposal, irrigation, and other works.

The Movement for New Water Rights Laws in the Tennessee Valley States, Volume 23, Number 7, The Tennessee Law Review (April 1955)

Basically, the argument for legislation such as that proposed in South Carolina rests on the proposition that the existing system of law is inadequate to resolve water conflicts and problems on a basis conforming with equity and the highest beneficial use of the water resource. Under existing law, it is pointed out, water not actually being put to use by riparian proprietors may be unusable by anyone, since nonriparian owners generally can obtain access to it only as trespassers and an actual right to it only by prescription. Even riparian owners, being entitled to a reasonable use of water rather than any definite quantity, may possess a right too uncertain to justify sizable investment in aid of a consumptive use such as irrigation. Under the proposed prior appropriation system, on the other hand, owners of non riparian land would be placed on an equal footing with riparian proprietors in obtaining access to water for irrigation and other purposes. Riparian and nonriparian irrigators alike would have preference over industries, as well as over other competitors except domestic users and municipalities, in the allotment of all water not already being used for beneficial purposes when the legislation was passed. They would obtain this preference, moreover, without being forced to compensate riparian owners for loss of or injury to presently unused but prospectively valuable riparian rights. All water users would know the maximum amount of water they could take under conditions of normal supply, the number of competing users having prior claims to water under conditions of less than normal supply, and, accordingly, the extent of risk involved in any given investment. Finally it is urged, the water problems now arising in this area differ only in degree and not in kind from those successfully solved by the Western States through adoption of the prior appropriation system, and the states of the Southeast have only to follow their example.

The argument is appealing and in some respects persuasive. Water unquestionably is an invaluable resource, and any legal system which prevents its beneficial use or which encourages its waste should be replaced or modified. Means must be found to permit use by nonriparian owners of at least such amounts of water as are surplus to the needs of riparians, and to encourage socially desirable investments in water using facilities by both.

One may agree enthusiastically to all of these propositions, however, and still entertain doubts whether the present system does not possess important advantages as well as disadvantages; whether adoption of a system of prior appropriation like that proposed might not produce detriments as well as benefits; whether the needs of the case do not require fuller definition - in economic, agronomic, and hydrologic terms - than has so far been provided; and whether those needs, when fully defined, may not be better met by one of several possible alternative solutions, not thus far given any consideration in this area, than by adoption of legislation such as that proposed in South Carolina . . . It seems appropriate to note here a number of seeming difficulties with certain assumptions underlying the argument for the proposed system of prior appropriation which are partly responsible for the reservations expressed above.

Assumption 1 - That the "problem of providing adequate supplies of water for all needs (in southeastern states) presents the same general type of situation that has occurred through the western 17 states in one form or another. The only real difference is one of degree".

Differences of degree, if wide enough, are likely to prove just as basic as differences in kind. Average yearly rainfall in the southeastern states is in the neighborhood of 50 inches; that in many western states is below 20. In the southeasterr states, supplemental irrigation offers a means of increasing agricultural yields and can be expected to increase substantially, but the economics of such irrigation in relation to different crops and other competing uses for farm capital, and the extent of the demands it is likely to make on southeastern water supplies, are still largely unknown quantities; in the West irrigation "alone makes possible not only agriculture, but the very life of the people in this vast semiarid region". Both the amount of water available in the humid East and the pattern of its use vary greatly from the situation in the West; . . . It seems prima facie evidence open to question whether laws tailored to one pattern of water supply and use can be expected to fit another so widely different.

Assumption 2 - That laws based on prior appropriation have provided a solution to the West's water problems, and that such laws have therefore qualified for transplantation eastward without modification.

In fact, the West's current water problems are enormous and, while there is no suggestion that the basis of its water rights laws is likely to be changed, there seems to be a growing body of indigenous opinion that they may be in need of substantial revision. . .

Assumption 3 - That the water rights laws of the various western states are substantially similar, both to each other and to the legal code proposed for South Carolina, and that the Southeast must choose between such a code and the riparian law as it now stands.

In fact, the water rights laws of the western states vary widely; the South Carolina bill represents a much more extreme version of the prior appropriation system than that followed in, for example, California or Texas; and a number of possibilities other than the existing riparian law or the South Carolina proposal appear deserving of study.

Assumption 4 - That optimum use of water resources will result from a system of legally established priorities applying uniformly throughout each state.

In fact, there are good reasons for believing that particular streams and parts of streams can best be utilized for one purpose, other streams and parts of streams for different purposes . ... . There is also reason to believe, particularly in the light of the West's experience, that the best use to which a stream can be put is subject to change, and that acquisition of unconditional rights to use specified quantities of water for one purpose may make difficult shifts to other uses which come to be regarded as more desirable from the public standpoint.

Assumption 5 - That adoption of a system of prior appropriation and concurrent destruction without compensation of riparian rights not actually being used when the new system is adopted pose no serious problems either of constitutionality or equity.

Prior appropriation was adopted in the West when that region was largely unsettled and when the principle of first-come, first-served was a natural one and relatively easy of application, whether to mining claims, homestead, or water. Obviously different questions are involved in applying the doctrine to a long settled area where water rights have already attached under a different system of law. . . A possible constitutional difficulty does exist. But the problem is not only one of constitutionality but of basic equity . . . What is proposed is to destroy the investment of riparian owners . . . largely in order to afford security of investment for nonriparian as well as riparian irrigators.

Adoption of legislation such as that proposed in South Carolina may prove, after full consideration, to be the best available answer to the water problems of the southeastern states. . . In our view, the most important ingredient necessary to preparation of a desirable final legislative product is still largely lacking. Before satisfactory legislation can be drafted, much more data concerning water supplies, probable future needs, and the relative economic values of competing uses than is so far available must be supplied by economists, agronomists, engineers, and hydrologists. . .

Selection of one system of water rights law rather than another will not increase the supply of water. Where there is insufficient water available to meet total demands, all users must accept a reduction, proportionate or otherwise, in the amount available to them, or some must be deprived of water altogether. The resulting conflict involves not only the equities as among competing users themselves but the public interest in preventing waste of water and promoting its most desirable use, tomorrow as well as today. It is in this framework that the merits of the different methods for solving the conflict must be evaluated.

Viewed in these terms, the riparian reasonable use rule and the prior appropriation doctrine both have important advantages and drawbacks. The major advantage of the riparian system is its flexibility. Since the social utility of any given use is one of the key factors considered by the courts in determining its reasonableness, a use which is socially desirable today may be accorded presently preferred status; new uses may be given recognition commensurate with their increasing public importance; and, if a use which is reasonable today becomes unreasonable tomorrow, the change may be appropriately reflected in judicial decisions. In these respects, the reasonable use rule is "utilitarian and tends to promote the fullest beneficial use of water resources". The major disadvantage of the riparian system is the lack of certainty it affords prospective investors in water-using equipment, since reasonableness of use depends on the circumstances involved, is not always readily determinable in advance, and may be subject to change. A second disadvantage associated with the system is that nonriparian owners ordinarily can acquire no water rights except by prescription; but, as hereinafter noted, this disadvantage is not inherent and can be overcome. (Note: A qualification is necessary with respect to the disadvantage in inability to use water for nonriparian lands. Nonriparian use of water may or may not be desirable. The major necessity is to assure use of all water that is available but if all available water can be put to most efficient use on riparian land, there may be no advantage in permitting a share of such water to be used on nonriparian land.)

Prior appropriation avoids much of the uncertainty inherent in the riparian rights rule. It gives each appropriator relative certainty as to the amount of water which will be available for his use, the extent of such certainty depending upon the particular appropriator's place in the priority

schedule. It also places nonriparian owners on a parity with riparians in obtaining access to water. The price paid for these results is lack of flexibility and a possible "freeze" on economic change and development. Once the waters of a stream have been allocated among appropriators, adjustments to meet new and socially superior needs may prove difficult or impracticable.

Can a legal system be evolved which preserves fully the advantages of the riparian rights and prior appropriations systems while eliminating their disadvantages? The answer is probably in the negative, since the two systems are in some degree antithetical. Certain alternatives do seem available, however, which may combine in some measure the principal advantages of each system while minimizing their disadvantages. Five such possibilities are outlined below. We advance them with the thought, not that any of the five necessarily or even probably represents the best final answer to the problem, but that they may help make clear that the range of possible choice is considerably broader than selection between riparian rights on the one hand and prior appropriation as proposed in South Carolina on the other.

(1) Extension of the reasonable use doctrine. The authors of the Restatement of the Law of Torts suggest that most courts which have adopted the reasonable use theory of riparian rights have never carried that theory to its logical conclusions. Under the reasonable use rule as they expound it, the fundamental right of each riparian proprietor would consist only in being free from an unreasonable interference by others with his use of water. Water use by any riparian owner for either riparian or nonriparian purposes would be privileged so long as reasonable in the sense of not interfering with reasonable use by others. The riparian privilege of use would be freely severable from the land and transferable to nonriparians. And since a riparian proprietor would have the right only to be free from unreasonable interference with his own use of water, he would have no ground for complaint unless and until actually injured.- and the period of prescription would not begin to run against him unless and until such injury actually occurred.

Adoption of this theory would preserve all of the present advantages of the riparian system and would facilitate use of water on nonriparian land. It would not, of course, provide the certainty associated with prior appropriation. Some measure of certainty could be achieved by combining this proposal with either of the two possibilities outlined in (2) and (3) below.

(2) Extension of the power of eminent domain. To the extent existing law prevents use of water, either by riparian owners who require a greater degree of certainty than the reasonable use rule provides or by nonriparians, it may be possible to provide such certainty by permitting them to acquire rights by eminent domain. Some means should be provided to assure that a proposed condemnation was actually in the public interest. And in order to retain flexibility, it might be desirable to limit the rights acquired to a term of years with provision for possible extension.

(3) Permits for water use. A degree of certainty can be provided through negative prohibitions rather than grants of positive rights. As previously indicated, North Carolina has recently adopted a statute prohibiting substantial withdrawals of water for irrigation without first obtaining a permit (N.C. Gen. Stat. §113-8.1). Such a permit system should protect users of water for purposes other than irrigation. It may also provide a method of bringing about equitable results among competing irrigators, and of giving permittees some assurance against issuance of other permits which would impair their investment while preserving (through appropriate

limitation and conditioning of permits) reasonable flexibility. Other states (Maryland, Minnesota, and Wisconsin) have employed a similar approach on a broader basis.

(4) The California system. The dilemma involved in seeking a reasonable balance between flexibility to permit future development in the public interest and certainty to encourage present development, also in the public interest, is nowhere better illustrated than in the experience of California. As previously indicated, the particular solution adopted by that state was a constitutional amendment (Cal. Const. Art. XIV, §3) which recognizes both riparian and appropriative rights; preserves rights to the extent they can be beneficially used at any future time; and permits permanent appropriation of water which is permanently surplus and temporary appropriation of water which is temporarily surplus to riparian needs. This device preserves flexibility by permitting any future desirable riparian use. At the same time, it permits nonriparian use of water and provides some degree of certaintly in assuring appropriators a right to a fixed quantity of water to the extent that it is surplus to riparian needs. Although this solution provides certainty to a lesser extent than is provided under strict prior appropriation, it has not prevented California from becoming by far the largest water-using state in the country.

(5) Modified prior appropriation. If full study indicates that the advantages of prior appropriation are so great as to warrant its adoption, several modifications nevertheless seem possible in the interests of minimizing the disadvantages associated with the system in its usual form. Three such modifications seem particularly important.

(a) The inflexibility associated with prior appropriation is magnified by the usual adoption of an order of preferences among water uses applicable uniformly on a state-wide basis. One method of eliminating this difficulty would be through adoption of the rule followed in Washington which permits the superior use to be determined separately in each particular case (Wash. Rev. Code, §90.04.030 - 1951). Another would be to apply the principle, already recognized in North Carolina in regard to pollution control, of establishing different orders of preferences on different streams and portions of streams, depending upon their particular characteristics and the economic and other conditions of the surrounding areas (N.C. Gen. Stat. §143-215).

(b) The basic argument made for prior appropriation is that a grant of appropriative right is necessary to encourage desirable use of water in the public interest. If this argument is accepted, it seems inconsistent to grant such rights on an absolute basis, thereby making difficult or impracticable shifts to other uses which may prove more desirable in the future, if more restricted rights will make possible the uses presently proposed. Specifically, it is suggested that consideration be given to limiting the duration of an appropriative right to a period of years clearly sufficient to amortize the investment necessitated by the appropriator's proposed use. At the end of that period, the matter could then be revised and the appropriative right renewed if in the meantime a superior use for the water had not developed.

(c) In the interest both of equity and of avoiding constitutional difficulties, it may be desirable to protect the presently unused rights of riparian owners. This could be accomplished either by condemning or otherwise acquiring such rights and charging appropriators fees necessary to cover the cost, or, as in Nebraska, giving riparian owners a direct right of action against appropriators.

What seems most needed at present is more facts. Information is necessary concerning the area's supply of both surface and ground water; the extent of existing use and of competition among conflicting uses; the extent to which water can be used economically for irrigation purposes in the area; the extent of the problem represented by nonriparian land and its possible need for water; probable future needs for different purposes in so far as they can be forecast; and numerous other matters.

When such facts are available, there will be a solid basis for decisions as to what water uses and future changes in water uses the state's economic development is likely to require. And only when such decisions are made can lawyers hope to write a water law that will best meet these requirements.

The Council of State Governments, Address by L. G. Merritt, Director, South Carolina Legislative Council, and Code Commission, Southern Regional Conference, Gatlinburg, Tennessee, May 27, 1955

The weaknesses of the law (riparian doctrine), as I see them, are: it lacks reasonable protection for those who have invested their capital in irrigation systems, industry, and other projects requiring use of quantities of water; it fails to recognize any system of priority of use, conservation, and prevention of waste; and it lacks effective administrative guidance to assure that development and use may follow a course that protects existing rights, and to assure full utilization of water resources in accordance with their inherent capabilities. The system was suitable to the past when water use was in excess of prevailing domestic and livestock requirements. It is not adapted to the complex agricultural-industrial-urbal economy of today, where large quantities of good water are required daily. Our riparian doctrine served well in days gone by, but our past mode of life is gone and not likely to return. Our water rights laws should therefore be brought into line with modern needs of today.

Such needs can be supplied by a modified type of the prior appropriation doctrine based on beneficial use, which has served the West so successfully. There an individual, a municipality, or an industry would know, barring an act of God, how much water it could count on. The ways in which water can be legally used should be defined clearly so that waste may be eliminated and excess water conserved. In South Carolina such a bill is currently before the legislature. The major objection has been to the granting of the use of water to beneficial users in perpetuity. This probably will be modified to a term of years, with a renewal dependent on conditions at the time when such renewal is sought. But the main objection has come from those who have failed to understand and appreciate how few rights they have and how very limited the legal use of water is under the riparian doctrine, and how much more they are being offered under the proposed new doctrine.

Address by Joe C. Barrett, Chairman, National Conference of Commissioners on Uniform State Laws, Southern Regional Conference, Gatlinburg, Tennessee, May 27, 1955

I am sure that grave constitutional problems face legislative draftsmen in some of the 31 so-called riparian states. Wherever the courts have held that the riparian owner has a vested right to use of water from a stream so long as that use is reasonable in relation to all other riparian owners, his status rises to a position in conflict with the principle that the state owns and has the right to control the use of water. Inherent in that status is some element of a property right greater than a mere usufruct appurtenant to

the land. No private property can be taken for public use without just compensation and it cannot be taken at all for private use. You can thus see the major problem inherent in an attempt by the state to recapture complete title to and right to control of surface waters.

Perhaps this could be accomplished by a sort of police measure that would regulate and control the use of surface waters, having somewhat the same result as the grant of a property right in water use for a limited time rather than in perpetuity. Approaching it by way of a regulatory restriction upon its use is somewhat similar in principle to zoning statutes. Then, too, perhaps if there is a limited grant, it presumes that the state owns the water as well as the right to control it and to say who may use it. If we can get to that point, there is no great problem. The solution may be in a lease to users, or in a license such as the Federal Communications Commission grants to radio and television stations, or in such relationship as that created by agreement for use of grazing lands. If either device be legally sound, the perpetuity question could be worked out.

Needless to say, there are extremely complicated legal questions involved in drafting in this field, and I was wholly unprepared to do it when I first began to study this problem two years ago. I think we are on the right track. Out of this meeting and others similar to it, some pattern will be developed. Somewhere in between the disadvantages of each (the prior appropriation and the riparian doctrine with reasonable use) we can find a legal foundation that will permit the states to assume regulatory control over water, one of our greatest natural resources, to the end that the states, through proper administrative agencies, can see to it that the use made will produce the greatest economic benefit.

There is no real problem in providing for a fair measure of judicial review of administrative action so as to protect applicants against arbitrary, capricious, or unlawful action. Neither will it be difficult to compel action unreasonably delayed or unlawfully withheld. There is a pattern for this in the Federal Administrative Procedure Act.

I do not know whether I have helped you, but the solution lies, I think, in legislation leading toward a modified appropriation doctrine granting priority rights to the use of water, limited in time rather than given in perpetuity. This appears to be the general effect of the objective regardless of the legal mechanics by which it is achieved.

The States and their Water Resources, pamphlet published by the Council of State Governments, September 1955

Within the past few years many states in the Eastern two-thirds of the Nation have been confronted with a serious water problem. Stated simply, the problem is that the supply of water appears to be inadequate to meet the demand for it. The problem does not exist in all localities nor does it exist at all times of the year. It is clear, however, that it is becoming more extensive and more serious. . .

Recognizing that we face a serious problem in this area, what can we do to meet it. This is the question which has concerned many state legislators and other state officials within the past two years.

First of all, it is clear that we need to undertake surveys of both our water supply and water needs. Data with respect to both are inadequate, and, obviously, no intelligent planning can be done without some clear idea

of how much we will need in the future. Likewise, we need to examine the use we are making now of our available water supply. It is important that such surveys be made of both ground and surface water resources, for we need to obtain information about all elements which make up our total water resources.

It is clear that states which undertake a basic study of their water laws must examine hydrological data and economic and legal questions. They need the best available data about the supply of water in the state, the extent to which it is usable for various purposes, and the amount of water currently being used by various types of users. In making such studies, it also is necessary to estimate the probable future growth of population in the state and the likely development of the economy. These estimates have an important bearing on the question of how much water the state will need in the future. Finally, if the state is considering basic changes in water rights legislation, constitutional questions need careful examination, for existing rights cannot be impaired except in accordance with constitutional principles.

The studies and other water programs underway in the several states demonstrate the interest of legislators, Governors, and other state officials in the use and conservation of our water resources. They indicate further that state officials recognize that water law and administration needs to be predicated on the assumption that the demand for water will continue to increase. Finally, current activities suggest that there is a growing realization that traditional concepts regarding water rights and use may have to be modified in order to meet present and future needs.

The task before the states is not an easy one, for the determination of a water resources policy has very far-reaching ramifications. Fortunately, the crisis is not so severe that the states must act in haste. What is needed now is study and careful consideration to provide the basis for legislation which will serve the needs of future generations.

Paper presented before the North Carolina League of Municipalities by J. Reuel Armstrong, Solicitor, Department of the Interior, October 24, 1955, at Durham, North Carolina

If your General Assembly one day deems it necessary to adopt the doctrine of appropriation, or some modification thereof, as a means of obtaining the maximum beneficial use of the water for the State as a whole, it might pay to examine the course that water law took in the States of California and Oregon. California had a well defined riparian water law until it superimposed upon the riparian law the doctrine of prior appropriation so that there are riparian rights and appropriative rights side by side in that state today. Oregon, on the other hand, when it changed from riparian law to the law of prior appropriation, had all of the riparian owners adjudicate their rights and convert them into appropriative rights. Both of these methods have been upheld in the courts.

An appropriative right, of which I have been speaking, is one authorized by statute after an appropriator has complied with certain requirements of the law. After he has acquired his right by applying his allotted share of the water to a beneficial use on his land, he may not thereafter be denied its use except in the case of abandonment of the use over a period of years, or he may be denied some or all of his share in the event the stream is so low that it cannot supply those who acquired rights prior to his. In other words, it applies the principle of first in time, first in right. Inasmuch

as beneficial use is the essence of appropriative right, the appropriation statutes place primary emphasis upon encouraging the sound development, wise use, conservation, and protection of water. As long as there is sufficient water in the stream to satisfy all appropriative rights, the water right is fully dependable. In times of shortage, however, the earlier valid rights take precedence. Thus, the appropriative right is exclusive and more dependable than the riparian right in common. Another advantage of the appropriative right is the ability to take the water away from property adjacent to the stream and transport it to other lands. This would not be permitted under the riparian doctrine. This right is often very necessary to cities, industries, and farms on high ground away from water courses.

While I am much more familial with appropriative rights than I am with riparian, since I live in a State which is exclusively bound by that doctrine, I do not want you to think that I am advocating the complete adherence to it. It does occur to many students of this problem, however, that the future uses along the streams in your State might well be governed by a law which recognizes the principle that the first certified user will take precedence in times of drought over users who were granted licenses at a later time. I expect that the most difficult problem the Assembly has is to protect the present riparian rights to their fullest extent. Certainly those rights have been vested for many, many years and are entitled to and will get all the protection that can be afforded them. . .

Some day it will be incumbent upon the Assembly to pass a law regulating the use of underground water, especially in these days when irrigation is becoming popular and profitable.

Some Current and Proposed Water-Rights Legislation in the Eastern States, by Harold H. Ellis, Symposium Issue, Iowa Law Review, in process

Much can be gained in many states by a thorough study of the applicable water laws and alternative avenues of individual or group action to accomplish desired ends within the framework of the existing laws. At least certain minimum modifications in the law of water rights in some Eastern States may become necessary, however, if such changes are not soon forthcoming through future court decisions. Following are some examples.

1. In States where the courts adhere to the "natural flow" riparian doctrine, or where the law is not at all clear on this question, the legislature might expressly provide that some reasonable and beneficial use of stream waters for irrigation and other so-called "artificial purposes" of a consumptive nature shall be permissible. Such rights of reasonable use might in some way be made subject to later adjustments by the legislature. Perhaps also they might be made subject to certain minimum flow requirements in all or parts of different streams, or otherwise subject to domestic uses, measures to protect aquatic life, and the like.

2. Unless the law already so provides, legislation might make it permissible to divert and store stream waters during periods of high flow when there is water in excess of existing uses for later beneficial use under specific conditions.

3. Unless the law already so provides, legislation might provide some way to permit some temporary use by others of some part of the water, not being used or likely to be soon needed by riparian owners, under contract with a riparian owner, or perhaps otherwise. . .

In any event, in adopting any such matters, their probable consequences should be carefully thought through.

Any material impairment of riparian rights in the process of modifying the existing water-right laws is likely to raise questions of constitutionality in most States . . .

A fundamental requirement is the obtaining of adequate physical, economic, and other information on which to make well-informed decisions, either by the legislature, the courts, administrative agencies, or local organizations. The need for such information becomes especially important as a basis for making any broad, long-range, and relatively inflexible decisions on a State-wide basis. For example, fairly detailed studies (showing variations by watersheds or other areas) of the location, amount, and availability of different sources of water, the economic feasibility or cost of utilizing them for different purposes, and the current and prospective needs and values of water in different areas for various agricultural, industrial, municipal, recreational, and other purposes would provide a better basis for determining the kind of State legislation that is needed, as well as serving other useful purposes.

The development of alternative approaches to the alleviation of current and future water problems calls for the combined efforts of a variety of technicians and specialists, including lawyers, economists, hydrologists, geologists, agronomists, pollution experts, and others.

Without getting into more refined criteria, some of the over-all goals might be to adopt, modify, or continue such laws and other measures as will promote the beneficial, efficient, and safe use, and conservation, of the available water supplies, and to develop any additional water supplies that may be needed in different areas. A part of the problem in developing any new legislation would appear to involve questions as to how to provide sufficient certainty and security in water rights to encourage desired investments, while also providing a legally sound, practicable, and reasonably equitable system of water rights, sufficiently flexible to keep abreast of changing conditions. Further work is needed, however, in connection with the defining of the public interest and other criteria for establishing short and long run goals in the handling of questions relating to water rights.